Is Rural Community Pharmacy Practice Different?

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Statements and declarations

Declaration of Originality

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The candidate acted as the corresponding author (Author 1) and contributed to the conception, design, data acquisition and analysis, and interpretation; and writing of the manuscript and conference presentations.

Authors 2–3 contributed towards the conception, design, data acquisition and analysis, and interpretation; and reviewed the manuscript and conference presentations for important intellectual content.

Papers and Publications

1. Does rural and urban community pharmacy practice differ? A systematic review

   Authors: Helen Howarth, Gregory Peterson, Shane Jackson

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Conference Presentations and Posters

1. Key stakeholder views of rural community pharmacy

   Authors: Helen Howarth, Gregory Peterson, Shane Jackson

   Rural Pharmacy Workshop, Pharmaceutical Society of Australia Conference (PSA17), Sydney, 2017.

2. Does rural and urban community pharmacy practice differ? A systematic review

   Authors: Helen Howarth, Gregory Peterson, Shane Jackson

   Poster, Pharmaceutical Society of Australia Conference (PSA18), Sydney, 2018.

3. Is rural community pharmacy different?

Authors: Helen Howarth, Gregory Peterson, Shane Jackson

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Date: 1 October 2018

Acknowledgments

This thesis has taken many years as a part time student, and at times, life can get in the way. However, the question that started it all, and the title of thesis, is still one dear to my heart. I do say to people that I have a PhD in form filling. But, I don't think I could have got back on track, without the extensive support from my supervisors, family and friends.

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Abstract

Introduction

With 5,665 community pharmacies in Australia, the nature and value of their services have been explored in some detail. However, the differences in practice between the 17% of rural pharmacies, compared to urban pharmacies, have not been investigated thoroughly. This thesis used several approaches to quantify and qualify the perceived and promoted differences in rural community pharmacy practice both in Australia and internationally.

The following research questions were proposed.

Primary questions:

- How and in what aspects does rural community pharmacy practice differ from that in urban areas?
- What are the implications and significance of these differences for development, support and implementation of new programs for rural community pharmacy practice?

Secondary questions:

- What are the influences in rural pharmacy practice today?
- What knowledge and skills define rural pharmacy practice today?
- What are the implications on recruitment and retention of pharmacists in rural areas?
- What are the implications for undergraduate and postgraduate training?

Methods

An extensive literature review was conducted of academic papers, government reports, popular articles and professional documents, which examined rural Australia, health in Australia and pharmacy. A systematic literature review was then undertaken to find comparative studies of rural and urban community pharmacy practice internationally.

Key opinion leaders were interviewed on two occasions to investigate potential changes in their views over time, about the profession and rural practice (2008–2010, 2016). Pharmacists, who participated in a cardiovascular research pilot project, Pharmacist Assessment of Adherence, Risk and Treatment in Cardiovascular Disease (PAART CVD),

were also interviewed (2009). A survey of pharmacists was undertaken to gauge their views on current and future practice (2014). Practitioner and consumer data, previously unpublished, was reviewed from the Third Community Pharmacy Agreement (3CPA) (2005) and the Fourth Community Pharmacy Agreement (4CPA) (2010) Quality Care Pharmacy Program (QCPP) evaluations, for differences between rural and urban practice. Finally, previously unpublished data from the Pharmacy Cardiovascular Health Care Model (PCHCM) (2005) examined differences in rural and urban community pharmacy practice from a consumer perspective. This then generated a body of work over a 13–year period with relevant papers from the systematic literature review going back to the 1990s.

Results and conclusions

The systematic literature review and other investigations, showed there was a lack of comparative data between rural and urban pharmacy regarding day-to-day practice, both in Australia and internationally, over the investigated time-period. In two published studies, rural pharmacies had a larger regular patient cohort, and the pharmacist was more likely to proactively engage in health conversations with patients.

While investigating data for practice differences, it was found that there was a lack of definition for what a 'professional service' entails, which caused confusion in the results obtained. Consumers and practitioners had quite different ideas on the extent of the availability of professional services within pharmacies. Rural consumers thought their pharmacy was capable of providing a service, but then they were unlikely to use it (2005). They also only had an idea of service based on what is currently available, or asked in the surveys conducted (2005, 2010).

Using 3CPA and 4CPA data there was no significant differences in professional service provision by rural and urban pharmacies (2005, 2010) using pharmacists and customers views. Patients with cardiovascular disease in 2005, were more likely to use their pharmacy for lifestyle advice ($p<0.00$) or dispensing ($p<0.00$), but there was no statistical significance between patronage by rural and urban customers for other professional services at this time.

Rural practitioners, who were interviewed, thought the pace of life and collaborations

with local health practitioners were two distinctive aspects of their practice. During the systematic literature review, conducted until the end of July 2018, it was found that sometimes more professional services were conducted in rural areas, but this difference was then discounted by some authors, suggesting the geographical circumstances accounted for this difference. Other studies found that if a pharmacy was located in a rural area, it was not a significant factor for professional service delivery, but any difference depended more on pharmacy size, type and staff numbers.

Pharmacists were concerned about a lack of improvement in wages or conditions over a number of years, yet there was an expectation to introduce new services within existing practice. Although some were ambivalent, pharmacists were interested, had confidence and enjoyed provision of new services, but were apprehensive about the time taken, given the other requirements of their current roles. However, this concern appeared not to be specific to rural community pharmacy.

Overall, pharmacists were reticent to charge the patient for time taken to deliver professional services, and would instead prefer the Government to pay. Historically, many pharmacists have not charged for any additional professional services or advice.

A lack of collaboration with other local health practitioners was shown by the degree of uncertainty about the practitioner relationships, expressed by pharmacists if professional services were introduced in the pharmacy. This sentiment was reflected by many practitioners, and this result was no different in rural practice, despite earlier suggestions that inter-professional collaborations were better.

In 2014, pharmacists would like to change their practice in the future, but they thought this would not happen; they were uncertain about the future, and felt no real change would take place in the profession. While key opinion leaders were at the forefront of the profession, and were positive about change, this change appeared to be slower at the practitioner level. Many ‘at-the-coal-face’ pharmacists were despondent; however, again, this sentiment was not specific to rural practice.

Examining policy reports over the past 20 years, the literature, and interview data, found that pharmacy as a profession does not ‘have a seat at the table’, when many national and state rural policies were, and are developed. Consequently, the profession was not mentioned as a significant ‘player’ in rural health. Community pharmacy was

often only seen as a place where prescriptions could be dispensed, and some primary health care services were provided. Pharmacists were only viewed in their roles within a community pharmacy and not in any broader role.

Recommendations

More comprehensive research is required in all areas of practice, to dismiss or confirm the disparities found in practitioner and patient beliefs, of current community pharmacy practice. This is not just an Australian phenomenon or a rural one. The profession has clear guidelines for minimum standards for 'professional services' but these must be acknowledged and consistently adhered to in every community pharmacy. In Australia, there needs to be an acceptance of payment for professional services by practitioners, whether the service be in part paid by the Government, or as a service charge paid by patients. There is a strong case for better remuneration and conditions for all pharmacists to enable a competent and sustainable workforce. A new modelling of suggested pharmacist staff ratios should be undertaken to consider incorporation of multifaceted complex professional services into day-to-day business across rural and urban community pharmacy practice in Australia. The profession and its associated professional organisations should clearly articulate the skill set of pharmacists to promote relevant competent practice at the highest level. A review of the current rurality classification system is required, to allocate funding and enable those practicing in rural locations, to take advantage of the opportunities available. New funding models should be implemented to allow for those who travel from urban settings to practice in rural areas and are not covered by current funding models. Models of pharmacy practice in rural areas should be supported by long-term funding to attract pharmacist practitioners. Finally, as a profession, there needs to be more pharmacy/pharmacist involvement in rural health policy nationally by professional associations, and locally by practitioners improving their own links with other health professionals.

There was little found to substantiate the assertion that rural pharmacy practice is overall different from that in urban areas. This lack of evidence, or at least documentation thereof, potentially jeopardises the profession, professional organisations, teaching institutions and the practitioners in attempting to lever off a

‘difference’ for funding, recruitment and retention in rural and remote areas of community pharmacy practice.

Glossary

AACP	Australian Association of Consultant Pharmacists
ABS	Australian Bureau of Statistics
ACP	Australian College of Pharmacy
AHPA	Allied Health Professionals Australia
AHPRA	Australian Health Practitioner Regulation Agency
AIHW	Australian Institute of Health and Welfare
ARIA	Accessibility/Remoteness Index of Australia
ASGC	Australian Standard Geographical Classification
ASGC-RA	Australian Standard Geographical Classification–Remoteness Area
CD	Census Collection District
CPA	Community Pharmacy Agreement 3CPA: Third Community Pharmacy Agreement 4CPA: Fourth Community Pharmacy Agreement 5CPA: Fifth Community Pharmacy Agreement 6CPA: Sixth Community Pharmacy Agreement
CPP	Community Pharmacy Programs
DAA	Dose Administration Aid
DMAS	Diabetes Management Assistance Scheme
FIP	International Pharmacy Federation (Fédération internationale pharmaceutique)
GIRS	Geographically-Adjusted Index of Relative Supply
GISCA	National Key Centre of Social Applications of Geographical Information Systems
GP	General Practitioner
GP-ARIA	General Practitioner Accessibility/Remoteness Index of Australia
HMR	Home Medicines Review (previously DMMR: Domiciliary Medication Management Review)
IPA	Isolated Pharmacists Association
MBS	Medicare Benefits Scheme
NAPSA	National Australian Pharmacy Students' Association
NDSS	National Diabetes Services Scheme
NPS	National Prescribing Service MedicineWise
NRHA	National Rural Health Alliance
OTC	Over-the-counter (medicines)
PAART CVD	Pharmacist Assessment of Adherence, Risk and Treatment in Cardiovascular Disease
PBS	Pharmaceutical Benefit Scheme
PCHCM	Pharmacy Cardiovascular Health Care Model
PGA	Pharmacy Guild of Australia
PhARIA	Pharmacy Accessibility/Remoteness Index of Australia
PHNs	Primary Health Networks also called Primary Health Care Networks (PCHNs)
PMP	Patient Medication Profile
PPA	Professional Pharmacists Australia
PPI	Pharmacy Practice Incentives (Program)
PSA	Pharmaceutical Society of Australia
PSA SIG	PSA Special Interest Group in e.g. Rural Pharmacy Practice
QCPP	Quality Care Pharmacy Program
QUM	Quality Use of Medicines
RA	Remoteness Area
RHSC	Rural Health Standing Committee
RRMA	Rural, Remote and Metropolitan Areas
RMMR	Residential Medication Management Review
SHPA	Society of Hospital Pharmacists of Australia
SLA	Statistical Local Area
WHO	World Health Organisation

Contents

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Chapter 1: Background review of rural health in Australia

With 5,665 community pharmacies in Australia [1], the nature and value of their services have been studied in relative detail. However, the differences between rural pharmacy practice compared to urban practice has not been explored as thoroughly. This thesis used several approaches to quantify and qualify the perceived and promoted rural practice differences both in Australia and internationally.

The following research questions were proposed.

Primary questions:

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- What are the implications for undergraduate and postgraduate training?

In this introductory chapter, the results of the literature review start with a broad discussion on health, demography and geography, governance and health policy in this country. Also discussed will be what is meant by the word 'rural', and the many differing standard classifications that have been used and changed over time, using Australian geographical and population indicators, to allocate federal, state and local funding. Finally, the specific rural health policies and frameworks used to guide health services will be reviewed.

1.1 Aims

The aims of Chapter 1 were to:

- provide a background of health, rural health and health policy in Australia
- examine rural policy documents and the inclusion or not, of pharmacy, its coverage and potential place

1.2 Background and demography of health in Australia

In 2014–5, 85% of Australia's population over 15 years of age considered their health to be 'good' or 'better' [2]. However, those who live in rural communities traditionally have lower health outcomes than those who live in urban areas. In these urban areas, there is more access to a wider range of medical options and services, and they are often associated with larger hospitals, with more health professionals. This section will explain 'health' in the Australian context and discuss the associated differences in rural areas of this country.

Following, will be a description of health services in Australia, which are provided by a combination of public and private organisations and businesses. Underpinning these entities are the health policies and frameworks, developed as a measure of action and improvement of the health for all; not just for those who live in regional, rural and remote areas. Nationally, various strategies, policies, frameworks and guidelines have also been written and used to guide planning, delivery and design of health services [3], initially focusing on common chronic conditions, and now currently on disease risk factors [4].

The majority of people in Australia live in what is considered as the Major Cities. These are the areas of Sydney, Newcastle, Wollongong (NSW), Tweed Heads and the Tweed Coast, Brisbane and most of the Gold and Sunshine Coasts (QLD), Melbourne and Geelong (VIC), Adelaide (SA), Perth (WA), and Canberra and Queanbeyan (ACT). Darwin (NT) and Hobart (TAS) are sometimes not included in this Major Cities group [5].

The latest spread of population found in the literature is described in Table 1.1 below using the Australian Standard Geographical Classification (ASGC) classification system which is outlined later in this chapter:

Table 1.1: Australia's population 2014

Geographical area	Population percentage	Population numbers
Major Cities	71%	16.6 million
Inner Regional	18%	4.3 million
Outer Regional	8.9%	2.1 million
Remote Areas	1.4%	324,000
Very Remote Areas	0.9%	208,000

Australia's health 2016, Australian Institute of Health and Welfare (AIHW), 2016 [6]

Just under 30% of the Australian population live in areas which are not Major Cities. They live in those areas considered as Inner or Outer Regional, in this classification system, with a further 2.5% living in Remote or Very Remote Areas of Australia [6]. Over time, the rural population has been decreasing. In 2001, assuming similar classification systems to describe areas that were not in the major cities, just under 7 million (35%) of the Australian population lived outside cities [7]; this dropped to 31% in 30 June 2009 [5], and further decreased by 2016, to only 29.2% [8] of the population.

Australia enjoys a good life expectancy and in 2015, with a population of nearly 25m people—life expectancy was 81 years for men, and 85 years for women found using the World Health Organisation (WHO) data [9]. In Australia, the expenditure per capita on health in 2014 was INT$4,357 (the INT$ is the international dollar, i.e. the United States of America (USA) dollar) and in the same year, 9.4% of the Gross Domestic Product (GPD) was spent on health [9]. For other countries, this is different. This compared to the USA with a population of nearly 320 million in 2015, where the total per capita health expenditure was INT$9,403, and where 17.4% of GDP (2014) was spent on health-related services and items. Life expectancy was less than in Australia, 77 years for males, and 82 years for females [9]. By contrast with both previously mentioned countries, South Africa, with nearly 55 million people, had a health expenditure per capita of INT$1,148, and the proportion of GDP spent on health was only 8.8%. Life expectancy was 59 years for men and 66 years for women [9].

The figures in the above paragraph do not delineate between those living in capital

cities, and those in rural areas or differences in the health status of any Indigenous people. For those living outside urban areas, for each country, the reality of the word 'rural' belies the complexity of the health, community, culture and financial support required to maintain this portion of the population.

1.2.1 What is rural?

The Australian Bureau of Statistics defines 'rural' as 'not urban', using a statistical geographical standard [10]. Hart et al. (2004) argues that this assumption was incorrect [11], an assertion confirmed by Wakerman and Humphreys (2008) [12, 13].

Dictionaries, such as the Oxford Dictionary, define 'rural' as:

> In, relating to, or characteristics of the countryside rather than the town. [14]

According to the Macquarie dictionary, the word 'rural' means:

1. of, relating to, or characteristic of the country (as distinguished from towns or cities), country life, or country people; rustic
2. living in the country
3. of, or relating to, agriculture; rural economy [15]

However, 'rural' does not necessarily mean an agricultural environment such as a cow in a paddock or a barren landscape. Rural communities include coastal communities, which have an income derived from tourism, or fishing, inland communities with an income from fruit orchards, light industry, mining or even those that act as satellite communities for larger regional towns and cities. Also associated with this industry, are the other professions and services of retail, education, government, manufacturing, processing and health [7].

These rural population areas could be classified as regional, small towns, or islands as well as remote or very remote areas of the country. Inherent in this nomenclature, many differing classification systems have been used alone, or concurrently, over time in Australia, to describe the complex service and funding allocation in health, community services or education.

1.2.1.1 Current classifications systems

The recent series of rural classification systems in Australia started with the Rural and

Remote Metropolitan Area Classification of Australia (RRMA) [16], developed by the Department of Primary Industry in 1994, using the Statistically Local Areas (SLA) as a base measure to show metropolitan, rural and remote zones using a whole number scale. Following on, the Accessibility/Remoteness Index of Australia (ARIA) system [12] was developed by the Commonwealth Department, Health and Aged Care, and the National Key Centre for the Social Application of Geographical Information Systems (GISCA), in 1997. It used five classes (Highly Accessible, Accessible, Moderately Accessible, Remote and Very Remote) with a range of levels within from 1 to 12. ARIA classifications used additional fractional values within the SLAs to identify different areas more accurately. This system used road distances, not straight lines, to set its classifications. ARIA was then further refined to an ARIA^{+} system, which used an island weighting for islands such as Tasmania. Five, instead of four, categories of distance to a service centre were extrapolated to a 15 value fractional range within. A further refinement, ARIA^{++}, used six categories and 18 fractional values to describe the rurality of various population areas in Australia.

According to the then GISCA website of the time, the difference in the two approaches was:

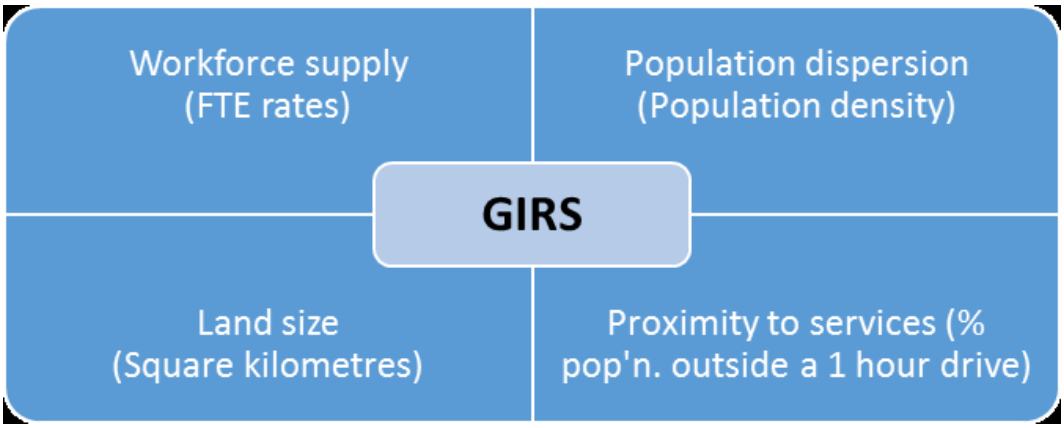
> It (RRMA) is an unambiguously geographical approach to defining remoteness. The ARIA index has a number of advantages over the RRMA index; these include flexibility, clarity, precision and stability over time. [16]

The next model used to replace RRMA and ARIA was the ASGC (2001) [17], which used Census Collection Districts (CDs) as a base to define Remoteness Areas (RAs). RAs were defined as the distance from the nearest urban centre, according to population size. One advantage of this model was that it was used by other Government agencies, such as in education and community services. Classification groups used were Major Cities, Inner Regional, Outer Regional, Remote, Very Remote and Migratory (Table 1.1).

In 2012, General Practice in Medicine used as a base the ARIA classification, to further investigate retention of long-serving General Practitioners (GPs) in rural areas in the GP Rural Retention (GPARIA) Project [18]. It identified an 'Inner Regional' classification, to recognise those living on the urban fringes, who may have the same difficulties in access to health services associated with more remote locations.

The newer GIRS model (Geographically-adjusted Index of Relative Supply) (2014) [19] took into account workforce, using a score system of 0–8, with 0–1 being for the most challenged areas. The 'one-hour drive time' measure to a health service, was considered the acceptable maximum time for a patient to take to see a health professional. It also used a complex combination of workforce supply, population density, land size and the percentage of those who could reach a service within the hour in the calculations (Figure 1.1).

Figure 1.1: Geographically-adjusted Index of Relative Supply components



Spatial distribution of the supply of the clinical workforce: relationship to the distribution of the Indigenous population, AIHW,2014 [19]

Currently, the most up-to-date system used in Australia is the Modified Monash Model, developed in 2015 [20, 21], based on the ASGC Model [17] (Australian Standard Geographical Classification) which incorporates health service data, and not just distance. It can also identify small towns and localities rated inequitably under the later ASGC-RA (Australian Standard Geographical Classification-Remoteness Areas) system [22], and can thus identify specific areas in need of health services. This detailed system is used for many health services, but not for community pharmacy and its funding allocations from the Community Pharmacy Agreements (CPAs) [23].

1.2.1.2 Current community pharmacy rural classification system

Despite newer and detailed models of geographical and population information and systems, the pharmacy profession still uses a simplified system similar to ARIA+, called PhARIA, to cater for its own specific needs [24]. Developed in 2000, the classifications are 1 to 6 (See Table 1.2 below), and are updated annually. This is managed by what is now called the Hugo Centre for Migration and Population Research, University of

Adelaide [24], and previously called GISCA. For PhARIA, the classification rankings are allocated to CDs within postcode regions. Thus, many rural and remote areas have a PhARIA rating, but do not have a pharmacy. In this system, a professional isolation component is calculated using the road distance to the five closest pharmacies.

Additional rules also apply to the PhARIA system:

- There is a buffer zone around a population centre so the whole area will receive the same rating as the populated area. This is a 30km radius of an external boundary of a population centre of more than 250,000 people, and 10km if the population is more than 18,000.
- Centres of more than 8 pharmacies are always classified as PhARIA 1 [25].

The following table (Table 1.2) shows examples of PhARIA categories compared to ARIA+ (2011), and examples of the current PhARIA rating of various population centres:

Table 1.2: PhARIA classification system 2017–2018

PhARIA category	PhARIA location example 2017–8	ARIA+ equivalent category	ARIA+ description	ARIA+ location example 2017
Category 1	Melbourne, Sydney Darwin Hobart, Launceston, Devonport, Burnie (Tasmania)	0–0.2	Highly accessible	Melbourne, Sydney
Category 2	Sorell (Tasmania)	>0.2–2.4	Accessible	Darwin Hobart, Launceston (Tasmania)
Category 3	Beaconsfield (Tasmania)			
Category 4	Campbell Town (Tasmania)	>2.4–5.92	Moderately accessible	Beaconsfield, Devonport, Burnie (Tasmania) Campbell Town (Tasmania)
Category 5	Swansea (Tasmania)	>5.92-10.53	Remote	Swansea (Tasmania)
Category 6	Currie, King Island (Tasmania)	>10.53-15	Very remote	Currie, King Island (Tasmania)

ARIA–PhARIA, Hugo Centre for Migration and Population Research 2017 [24, 25]

Hobart, Launceston and Burnie in Tasmania are rated as PhARIA 1 within the PhARIA system, the same as Melbourne and Sydney, despite not being considered as Major Cities by ASGC, and the other classification systems previously discussed.

The PhARIA and ARIA system ratings appropriate to the time of the particular study, will be used in the various investigations and projects described later in this thesis.

1.2.2 What is rural health?

Over time, health status in rural Australia has not changed significantly. In 2004–5 in regional and remote areas, compared with major cities, data was lacking as to the prevalence of chronic disease. It was reported then, that in rural areas:

- the self-reported prevalence of injury was at least 20% higher
- death rates due to chronic disease were higher [7]

Australian social trends data from the ABS, which used the 2007–8 National Health Survey, the 2007 Mental Health and Wellbeing Survey and 2008 Census data [5] found that outside major cities people:

- lived 4 years less on average
- had no significant difference in occurrence of diabetes, high cholesterol, hay fever, cancer or ischaemic heart disease
- compared to those in major cities were more likely to:
    - die from ischaemic heart disease (44%) or stroke (31%), three times more likely to die from transport injury or 66% more likely to die from suicide
    - have arthritis (13%), deafness (27%), back pain (23%), and a mental health problem (16%)
    - have incurred a long-term health condition as a result of an injury (30%)
    - be a smoker (30%) or long-term risky drinker (32%) [5]

In 2011, the health of those in the major cities was in many ways similar to those in rural areas, but people in rural areas were more likely to die of their illness [5].

The latest available data from the Health Survey 2014–5 showed that at least one in eight people lived with a chronic health condition, and the impact on health and

longevity was worse in rural and remote areas of Australia [6]. Compared to the previous health survey, in 2014–5, the rates of diabetes, arthritis, cardiovascular disease, asthma, mental health problems and deafness, increased outside population major centres. Back pain and its associated problems, blindness and chronic obstructive pulmonary disease (COPD) increased in the inner regional areas, but then decreased in outer regional and remote areas. Cancer rates were similar in all areas [6]. Overall, the rate of cardiovascular disease was 4.7% in major cities, 6.7% in inner regional areas and 5.8% in outer regional and remote areas of Australia. [6].

Risk factors for chronic diseases such as smoking, low exercise levels and alcohol consumption, increased the more remote the population. Obesity increased for those living outside major cities. These risk factors for different geographical areas are described in the table (Table 1.3) below taken from the report, Australia's health 2016 [6].

Table 1.3: Health behaviours and risk factors in different geographical areas of Australia 2016

Health behaviours and risk factors

People living in rural and remote areas generally have higher rates of health risk factors. The rates among adults in *Major cities*, *Inner regional* and *Outer regional/Remote* areas, based on self-reported data from the 2014–15 NHS (ABS 2015), were:

	Major cities	Inner regional	Outer regional/ Remote
Current daily smoker	13%	17%	21%
Overweight or obese	61%	69%	69%
No/low levels of exercise	64%	70%	72%
Exceed lifetime alcohol risk guideline	16%	18%	23%
High blood pressure	22%	27%	24%

Notes
1. '%' represents prevalence of risk factor in each region (excluding *Very remote* areas of Australia).
2. 'Proportions' are not age-standardised and, in some instances, higher prevalence may reflect the older age profiles in *Inner regional* and *Outer regional/Remote* areas.

Australia's health 2016, AIHW, 2016 [6]

In addition to differing rates of disease and risk factors in rural areas, a combination of

environmental enablers and specific essential requirements, underpins the provision of rural health services. Supportive policy, cohesive relationships between different levels of government, and community readiness are the environmental enablers are mandatory [13]. Workforce organisation and supply, adequate funding, adequate governance with management and leadership, linkages between agencies and physical infrastructure are essential requirements of health care, stated by Wakerman and Humphreys in 2008 [13]. In the text on rural health, Bourke and Sheridan (2008) [26] stated that a rural health service must be affordable, available, accessible, accommodated and acceptable.

'Rural health' is often defined in terms of distance from a larger population centre (Wakerman and Humphreys, 2008) [13]. Bourke et al. (2004) [27], however, described characteristics of rural-urban health differentials as access, confidentiality, cultural safety or cultural security and team practice. Others below, argue that the local social and economic determinants of health, create the differences between health in rural areas, not the conventional disease differences often quoted previously.

Wakerman and Humphreys (2002) [28] also suggested earlier that rural health was a significant issue because it is different to urban health, and the health differentials such as geography, access, and sociological, cultural, spiritual and economic differences [28], are integral to rural and regional development in Australia. The authors advocated that:

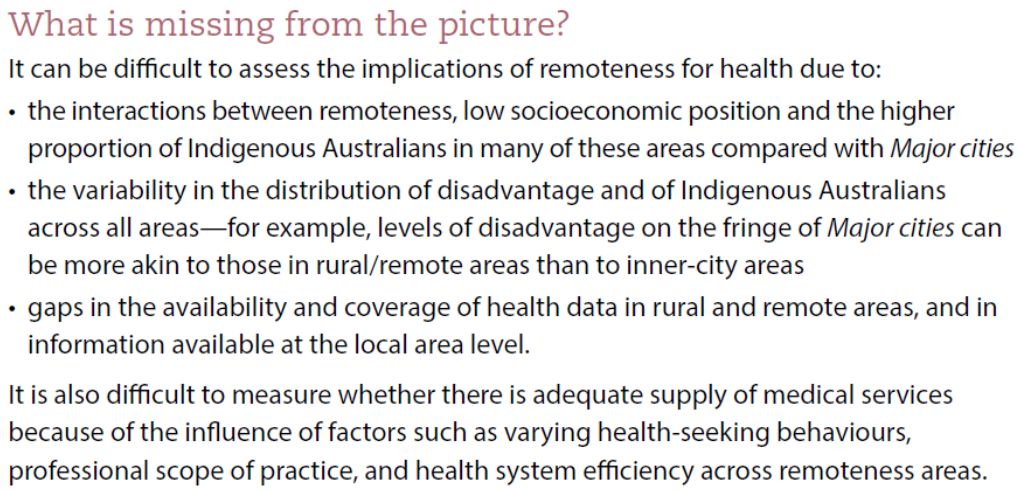
> …good health does not result from access to health services alone [28]

They suggested that lessons for all could be learned from innovative rural practice models involving local need and community action, which used a primary health care framework model. Consumer satisfaction with rural health services in Australia depended on availability, geographical accessibility, choice, continuity and economic accessibility according to Smith et al. in 2006 [29]. The survey they conducted showed that although one-third of rural consumers had an unreported complaint (60% with doctors, 31% with hospitals), only 11% actually made a complaint, and overall, the general satisfaction level was high [13]. This survey had a relatively low level of response (16.5%), and so may have been contaminated with bias towards complainants. Yet, compared to urban counterparts, rural consumers in this survey were 25% per capita less likely to complain.

Demographical modelling of Australia's rural regions indicated a higher number of older people, in part due to migration to the cities by younger adults [30]. However, Aboriginal and Torres Strait Islander populations usually had a greater proportion of younger people, who also had a higher level of fertility and overall less migration. Larson in 2007[30], claimed that the need for health services was skewed towards the demographic profile of those in the cities, thus adding another layer to the complexity of adequate rural service provision requirements.

Rural health care is not necessarily 'poor' because a particular service is not available in that area. However, this lack of equality, not equity, to health services in urban areas, were how some health services are assessed as stated by Bourke and Sheridan (2008) [26].

Figure 1.2: The complexity of assessing rural population requirements in Australia 2016



What is missing from the picture?

It can be difficult to assess the implications of remoteness for health due to:

- the interactions between remoteness, low socioeconomic position and the higher proportion of Indigenous Australians in many of these areas compared with *Major cities*
- the variability in the distribution of disadvantage and of Indigenous Australians across all areas—for example, levels of disadvantage on the fringe of *Major cities* can be more akin to those in rural/remote areas than to inner-city areas
- gaps in the availability and coverage of health data in rural and remote areas, and in information available at the local area level.

It is also difficult to measure whether there is adequate supply of medical services because of the influence of factors such as varying health-seeking behaviours, professional scope of practice, and health system efficiency across remoteness areas.

Australia's health 2016, AIHW 2016 [6]

From the data in Figure 1.2 above, taken from 2014–5, the questions posed 10 years previously, were still unanswered as to the actual status of health for those living in rural and remote areas of Australia.

1.3 Governance of health services in Australia

In Australia, health services are controlled and delivered by a number of layers of the public sector, together with the private sector. Each has a specific role; however, there is often an overlap in service, funding and staff. In 2013–4, the total cost of health provision was predicted to be AUD$155b, two-thirds of which came from the various levels of government [6].

The three levels of government (federal, state and local) provide health services differently in the various regions and states of Australia. The Commonwealth Government, Department of Health, either funds the states to deliver services, distributes lump-sum payments to states for delivery, or funds those organisations which coordinate services, such as the Medicare Locals, now the Primary Health Networks (PHNs) (as of June 2016). It also funds various non-government agencies.

Services coordinated at a national level are Medicare, the Pharmaceutical Benefit Scheme (PBS) and the CPAs, the Therapeutic Goods Administration, purchasing of vaccines, aged care services subsidies, education (funded university places and schools), pandemics and national coordination of other health emergencies. The Department of Health also manages a number of rural and regional health programs mainly related to doctors [31] and some other medical, pharmacy and allied health programs. Registration, regulation and accreditation of 15 health practitioners providing services is managed by the Australian Health Practitioner Regulation Agency [32].

Funding for health services provision for all areas in Australia is a complex combination of differing sources, government support together with local delivery. Pharmacy funding is nationally provided through the CPAs, negotiated at a national level for local implementation [33].

1.4 Health policy in Australia

Health policy in Australia is developed by a number of organisations and departments, under the auspices of what was the Department of Health and Ageing, and what is currently, the Commonwealth Government Department of Health. Examples of policy include Primary Care or Primary Health Care, Chronic Disease Frameworks and preventative policies to cover the 'out-of-hospital' population health requirements, and necessities of the community, especially the local communities. In addition, state-based policies have also been developed, to incorporate local health requirements of state specific issues of concern. The original focus of the policies was on health targets, but they are now currently focused on risk factors such as smoking and obesity, lack of exercise and hypertension (as shown in Table 1.3). However, general health policy documents do not take into account specific rural requirements.

1.4.1 Strategy and health targets in Australia

The National Chronic Disease Strategy (2005) combined principles and action areas, to attempt to contain the chronic disease burden on the Australian community, and was approved at the 2005 Australian Health Ministers' Conference [34]. Lifestyle changes, such as reduction of tobacco smoking and alcohol use, weight reduction, decrease in high blood pressure and high cholesterol, an improvement in diet and nutrition, and an increase in physical activity, were the seven preventable disease risk factors to alleviate the potential financial and community impact of chronic disease. Coupled with the demographic changes as Australia's population ages, and major advances occurring in treatment, the chronic disease burden was considered the major health concern.

In 2016, the Atlas of Australia's Health, Australia's Health Tracker [35] was released and predicted various health targets based on the WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases (2013–2020) [36]. The Tracker showed risk factor rates in local areas and thus provided local health targets, to enable local health planning and research, for all areas of Australia. Examples of overall targets suggested include the reduction of obesity from the current levels of 27.9%, to 24.6% for those 18 years or over, a decrease in hypertension from 23% to 16.1%, and a decrease in elevated cholesterol levels from 32.8% to 24.6% [35].

1.4.2 Chronic disease strategy and frameworks

Going back to 2006, the National Chronic Disease Strategy [34] was developed as a high level policy guide to inform policy makers and practitioners. To support the strategy, the National Disease Frameworks [34] focused on prevention, critical intervention and action points, risk reduction, early detection, care and support during acute, long term and advanced stages of specific diseases. There were frameworks for asthma, cancer, diabetes, rheumatoid arthritis and osteoporosis, as well as heart, stroke and vascular disease. The frameworks still exist today, but have now been overtaken by more up-to-date policy documents.

In 2016 the frameworks above were superseded by the National Strategic Framework for Chronic Conditions [4]. Rather than focusing on specific diseases again, this framework focuses on the shared underlying health determinants, risk factors and multi-morbidities shared by common chronic conditions in all Australia, such as weight

reduction and smoking prevention.

Updated in 2017 [37], and current until 2025, the National Strategic Framework for Chronic Conditions still concentrates on prevention and management of chronic conditions, supporting coordinated care but it acknowledges the use of innovative solutions in management. Reforms to deliver a more sustainable, 'person-centred' health system include pharmacy and medicine price reforms, and the introduction of Primary Health Care Networks [37]. People living in remote, rural or regional locations are a priority population. The planning and delivery of health services with an appropriately distributed workforce should recognise the diversity of the population in all locations. Health services should be culturally appropriate, accessible and provide flexible options for all [37]. The National Strategic Framework for Chronic Conditions provides guidance to enhance disease-specific approaches to address the increase of chronic conditions in Australia and in particular for those in regional, rural and remote areas.

1.4.3 National Preventative Health Strategy 2009–2020

Following on, another seminal health framework document, Australia: The Healthiest Country by 2020, the Roadmap for Action [38], was published in 2009. Written by the National Preventative Health Taskforce, this primary health care approach to improved health outcomes focused on prevention, with a vision of people making healthy choices the easiest choice, and the tag, 'prevention is everyone's business'. Obesity, tobacco and alcohol reduction within a supported infrastructure, with effective implementation, and a primary health care approach, were the three areas chosen as the initial goals.

Each risk factor above, had key action areas to reduce the risk, with a series of interventions aimed at adults, children and the Aboriginal and Torres Strait Islander population. The role of pharmacy is mentioned briefly. In this document, pharmacy weight-loss programs were specifically cited as lacking in evidence, with many making unsubstantiated claims. The taskforce called for a national accreditation, and trained consultants. Pharmacy also was cited for providing tobacco cessation advice and information.

This framework aimed to refocus primary health care settings towards prevention. Community pharmacy is included as one of the professions which provide primary

health care, and it can provide the necessary services to achieve this aim. Albeit, only some of the possible contributions were listed from those that could be made by the profession.

In addition to the above policies and frameworks, the National Partnership Agreement on Preventative Health was announced at the Council of Australian Governments (COAG) in 2008 [39]. In 2012, this partnership was extended until June 2018. Concentrating on lifestyle issues, which added to the chronic disease burden, the agreement had a whole-of-life approach to improving health outcomes for all Australians.

1.4.4 Primary health care policy

Pharmacy as a profession, can contribute at the primary health level, but is often not specifically mentioned or included. Definitions of primary care and primary health care were often intertwined, but are generally considered to be the 'first' contact with the health system, whether this occurs between a patient and a doctor, nurse, pharmacist or any other allied health professional. This contact is usually considered in a 'non-admitted' context.

Berbatis et al. (1986) [40] maintained pharmacy was the first contact primary care service for individuals in Australia with 125 million paid and unpaid health-related services provided annually in the 1980s. By 2002, the National Pharmacy Database [40] estimated this figure had increased to 220 million visits. In 2018, it was claimed by the Pharmacy Guild of Australia, the number of visits had increased to 440 million per year [1]. However, Berbatis et al., in 2003, pointed out that pharmacists could not be regarded as 'primary care professionals', because they cannot legally diagnose, do not keep long term records of patient-care or provide comprehensive health care. In the author's view this may be argued as semantics and is not the case today given additional practice roles for pharmacists [41-43].

Primary health care policy has been developed in various forms, with strategies, and preventative and clinical frameworks. In 2011, the Australian Government established 61 independent Medicare Locals, each with a primary care focus. They were introduced to provide better-coordinated, and less fragmented care, particularly to those with a chronic health condition. Extensively funded, Medicare Locals [44], had an increasing

budget over a five-year funding cycle.

The Medicare Local approach to health fund management changed on 30 June 2015, by competitive tender, to become Primary Health Care Networks (PHCN or PHNs), as part of the then Australian-Liberal Government policy. Each state now has fewer PHNs compared to some states, which had many Medicare Locals. The common focus is that:

> PHNs have been established with the key objectives of increasing the efficiency and effectiveness of medical services for patients, particularly those at risk of poor health outcomes, and improving coordination of care to ensure patients receive the right care in the right place at the right time [45].

1.5 Rural health policy in Australia

There have been various rural health policy documents, strategies and frameworks developed over the past 20 years. Organisations of rural health professionals, such as the National Rural Health Alliance (NRHA) [46] and its individual member bodies, have had a great impact on the recognition, and change, of rural health issues at a policy level. However, Humphreys et al. in 2002 stated that there were a number of 'impediments' to improvement [47]. These include city dominance as foci of health service provision, a lack of rural community consultation, rural health 'specialist-generalists', medical dominance, turf wars, existing federal and state governments with their 'silo mentality', and current funding arrangements. The authors also suggested that 'governments view health, as with education and other collective consumption goods, as a social expense rather than a social investment'. The impact of the media and rural health as a political tool has also hindered overall progress over the years.

The various documents found that relate to rural health will be discussed in more detail.

1.5.1. National Rural Health Strategy 1994, and Update 1996

Initially, the National Rural Health Strategy (1994) [48] and the 1996 update [49] were written with aims to provide access to appropriate health services that maximise the health, and minimise the barriers to effective health care, for regional, rural and remote Australians. A review in 1998 concluded that many programs had failed in meeting these objectives [50].

1.5.2 Healthy Horizons Frameworks

In 1999, the Healthy Horizons Framework—a Health Framework for Rural, Regional and Remote Australians 1999–2003 [51], was the next document developed to describe the improvements required for better rural health. It was written by the National Rural Health Policy Forum and the NRHA, to provide direction and guide health programs and resource allocation. It highlighted the poorer states of health in the 32% of the population (at this time), who made up those living in rural and remote Australia. Death rates were higher in remote areas compared to rural areas, in part due to the health of the Aboriginal and Torres Strait Islander population. This framework aimed to improve primary health, and public health, through the principles of community need, capability, participation, access and sustainability, and to allow its members to promote a healthy lifestyle and manage their health problems. The seven framework goals were to:

- improve the highest priorities first
- improve the health of Aboriginal and Torres Strait Islanders
- undertake research and provide better information to rural, regional and remote Australia
- develop flexible and coordinated services
- maintain a skilled and responsive workforce
- develop needs-based flexible funding arrangements for rural, regional and remote Australia
- achieve recognition of rural, regional and remote health as an important component of the Australian health system [51]

Each interdependent goal had a number of priority areas, to address, and to measure success. The overall vision stated that:

> People in rural, regional and remote areas will be as healthy as other Australians [51].

When this framework was written there were only five National Health Priority Areas (mental health, diabetes, cardiovascular health, injury prevention and control, and cancer control), which were reflected in the priorities and measurable outcomes.

In 2003, Healthy Horizons evolved into the Healthy Horizons Outlook 2003–8 [52], an updated framework to improve the overall health goals, and thus reduce inequities in outcomes and service delivery.

Neither document mentioned pharmacy, pharmacists or medication supply as a community health service, or those pharmacists who worked in hospitals, specialist medical services or Aboriginal community-controlled health services, outreach services, nursing home care, multipurpose services, air services, ambulances and transport, public and environmental health, or in training and support of health practitioners. Pharmacists were only mentioned as providing primary health care advice [52].

Pharmacy services were quoted in the framework, by explaining that the National Medicines Policy strategy required judicious, appropriate, safe and efficacious need for medicine be addressed. Section 100 access to the PBS for Aboriginal communities, was also mentioned briefly [52] in the documents. Overall, these policies showed little involvement, and acknowledgement of the current and potential contribution, by the pharmacy profession.

1.5.3 National Strategic Framework for Rural and Remote Health

In 2011, the National Rural Strategic Framework for Rural and Remote Health [3], superseded the Healthy Horizons frameworks, to provide continuity of strategic development for regional, rural and remote Australians—all those who lived outside major cities, or 30.4% of the population (at the time). It was developed by the Rural Health Standing Committee (RHSC) and the Australian Health Ministers' Advisory Council (AHMAC). The key outcomes areas were:

- access—improved appropriate and comprehensive
- service models and models of care—that are effective, appropriate and sustainable
- health workforce—that is appropriate, skilled and well-supported
- collaborative partnerships and planning—which includes policy development
- strong leadership, governance, transparency and performance—which includes accountability

The vision was the same as in 1999; only the goals had been altered. Still, the same basic issues were identified as those requiring change. Services mentioned included prevention and screening, early intervention, treatment and aged care services, and delivery of 'specific' primary health services, hospital and emergency care, dental health, maternity and preventative health, many of which could be delivered by the pharmacy profession.

Pharmacy was only mentioned in this document as an allied health profession engaged in 'primary care', which was also called 'primary medical care'—thus reinforcing the medical model approach. Primary Health Care incorporated not only the medical profession, but also all other allied health professionals (none in particular were highlighted) and health workers.

1.6 Rural health expenditure

In 2011, the NRHA argued in its report, Australia's health system needs re–balancing: a report on the shortage of primary care services in rural and remote areas [53], that many of the costs in rural health were not reported properly [54]. It suggested that people in rural, regional and remote areas did not access primary health services and were more likely to go to hospital as an inpatient. In monetary terms, the primary care deficit was estimated as AUD$800m, with an additional pharmacy expenditure deficit of AUD$850m (adjusted for the concessional cardholder number differences). For the pharmacy profession, this equated to 11 million fewer prescriptions for rural people compared to those who lived in a major city. In rural, regional and remote areas of Australia, there was a AUD$3b deficit of primary and aged care services. In contrast, there was an overspend of AUD$829m in hospital expenses.

Per capita spending on the PBS decreased by remoteness, and the AIHW report [54] did take into account 53% of the cost of medications (being the PBS and Section 100 components of total pharmaceutical expenditure), but did not take into account the remaining 47% for non-PBS medication. These calculations showed that, in 2006–7, while the non-card holding population in regional areas overspent roughly AUD$10 per capita, the concession card holders in regional areas (45% of that population) experienced an underspend of between AUD$140 and AUD$190 per capita. The expenditure for non-PBS medications in rural, regional and remote areas was estimated to be AUD$1.7b per annum coupled with a shortfall AUD$350m for PBS medications—a total of at least AUD$2b lost to provision of pharmacy services. These figures suggest the Australian rural and regional populations may not be taking advantage of health services.

1.7 Summary

Health, and specifically rural health, is a complex combination of factors, both at the site of service, and the overarching policies developed to support the health services. The various classification systems affect local funding and services, and except for pharmacy, have changed over time to reflect the population and geographical factors specific to the areas of need.

Overall health in rural areas of Australia is worse than for those in major cities of this country, and not all services are available in rural areas, to address its needs. Equity of service is required, not equality. Many documents have been written over time to guide and frame not only health, but also rural health services, yet the health disparity still exists within this country.

There are additional factors that need to be considered, especially in rural areas, such as access, appropriate service models of care, the health workforce, collaboration and cultural appropriateness of services. Anecdotally, rural health services are often considered innovative and the leadership, governance, transparency and performance need to be allowed to emerge. However, specific policies and frameworks developed for rural areas to date, have not improved the health of this population compared to the population as a whole. This is despite measures put in place over time, to address the specific concerns of equity, access, capacity and sustainability of service provision in Australia [55]. These issues of concern also are not unique and occur overseas [56].

Pharmacy, as a profession, is not usually mentioned in generic or health policy documents. The role of the pharmacist is not separated from the value of the premises as a location, for the dispensing of prescriptions and administering of primary health advice. The policies and frameworks documents did not include the potential contribution of the profession to primary health care, the diminution of disease risk factors and its contribution to chronic disease prevention and management. While rural people were less likely to complain about their health service, they also did not spend or access health care provided or use the PBS as much as their urban counterparts.

As a pharmacy profession, the service contribution in rural areas is restricted using the PhARIA system, which was developed in 2000, and used to decide any funding

allocation and identification of rural and remote practice recipient sites. Its rigidity, compared to other rural classification systems described, restricts practice and funding apportionments to some regional and rural areas by classifying them as urban under this system.

Currently, Australian community pharmacy is defined by its services under the CPA, which will be further described in the following chapter. The contribution of the profession is still hampered by lack of current data and research, and the focus remains currently on the pharmacist in the community pharmacy itself, whether this be in urban or rural locations. Many risk factors to good health have been reported in this chapter, and the pharmacist is able to address these. As shown by the various competency [57, 58] and professional practice standards developed over the years [59-62], the pharmacist can contribute to improve health outcomes for those engaged in risk taking behaviours (smoking, obesity, lack of exercise and alcohol consumption) and assist those with chronic conditions of concern such as cardiovascular disease and diabetes.

Reports such as a Grattan Report: Access all areas: new solutions for GPs in rural Australia by Duckett et al. (2013) [55] suggested a wider role for pharmacists in rural areas in this country, one supported by the Pharmaceutical Society of Australia (PSA) [63] rather than a role as merely a provider of primary health services, medicines and medication information. This will be discussed in the following chapter, which will focus on the current role and governance of the pharmacists and the pharmacies in Australia. Future chapters will then describe the studies undertaken to demonstrate the pharmacist role in improving rural health outcomes, and results of comparative studies investigating services in rural and urban areas.

Chapter 2: Pharmacists and the factors influencing rural and urban community pharmacy in Australia

The profession of pharmacy is an integral part of the country's health landscape, and has its own rules, guidelines, and standards to describe competent practice. There are many professional bodies guiding and shaping this practice, as well as many other factors affecting the pharmacy workforce of today, and into the future. The specific activities in recruitment, retention and the workforce, the roles of rural community pharmacy itself, and the influence of customer expectations and satisfaction, will be discussed in this chapter.

In Australia, only 17% of community pharmacies [64, 65], and their workforce, assist the nearly 30% of people who live in regional, rural and remote areas [5, 8]. It was considered that there was a deficit of pharmacy service provision in rural areas as reported by the NRHA (2012) [66], despite the many measures enacted so far to alleviate this shortfall such as those through the Community Pharmacy Agreements (CPAs) [33, 67-72].

Community pharmacy as a profession, considers itself as the front-line for health and health information, screening or treatment options, and not just for medicine provision. The previous chapter showed how pharmacy as a profession is not comprehensively included in health or rural policy documents. In addition, some organisations, do not even include community pharmacy as an allied health profession at all, such as the Allied Health Professions Australia (AHPA), 2017 [73]. Hospital pharmacy is listed, but community and the other forms of pharmacy practice are not.

2.1 Aims

The aims of Chapter 2 were to describe the:

- historical and current roles, and the features of community pharmacy practice and its workforce
- various government constraints and professional bodies which guide this practice in all areas

- current differences and opportunities for rural community pharmacy practice and its workforce
- consumer perceptions and expectations of community pharmacy practice

2.2 Role of the pharmacy and the pharmacist

The roles of the community pharmacy and the pharmacist him/herself are often intertwined in the literature. Pharmacy (or pharmacists) are quoted as the 'most trusted profession', in various media releases and newspapers. The 2016 Roy Morgan [74] rated pharmacists again equal second with doctors behind nurses, for ethics and honesty. In 2017, pharmacy dropped another place (nurses 94%; doctors 89%; pharmacists 84%) [75]. A similar survey by Readers Digest ranked pharmacists 7th behind paramedics, in 2014 [76]. The latter survey used 50 professions, while Roy Morgan only used 30, and did not include paramedics. However, Smith and Newby in 2011 challenged this trust with examples of questionable sales ethics [77]. Suggestions of pharmacy being only interested in profit are often in the popular media, thus implying questionable trust, professionalism and knowledge. Community pharmacy is the usual public face of the profession in Australia, and will be described further below.

2.2.1 Community pharmacy

The Pharmacy Guild of Australia (PGA) stated in 2007 that:

> In Australia, community pharmacy plays a pivotal role in the healthcare system. Through a network of over 5000 shop-front centres across the county [sic], Australians receive access not only to affordable medicines but also free healthcare and medicine management advice and information.
>
> Community pharmacists and their staff are highly trained professionals who act as a first port of call for many health issues. They are able to provide you with direct advice, information or treatments as well as refer you to other appropriate health professionals or community services if required [78].

In 2016, there were 5,587 community pharmacies in Australia, with about 20% in rural and remote PhARIA 2–6 areas [64] as quoted by the PGA's website [79]. There has been no information found as to the number of pharmacies in regional towns. In 2017, there were 425 one-pharmacy towns [79], a decrease from '480+' (13.5%) in surveys

undertaken in 1990 and1991 by the Isolated and Essential Pharmacists Association [80].

Further correspondence with the PGA [64, 81] indicated only 17% or 964 community pharmacies, were in rural Australia using the PhARIA classification system. The number of pharmacies in the various PhARIA areas is shown in Table 2.1. In August 2018, there were an additional 78 pharmacies according to the PGA [1] with the proportions in each PhARIA area remaining the same [65], and these have been added into the table below.

Table 2.1: Location of community pharmacies in Australia by PhARIA rating 2017–2018

PhARIA rating	Percentage of pharmacies in each PhARIA area February 2017	Number of pharmacies (whole numbers) February 2017	Percentage of pharmacies in each PhARIA area August 2018	Number of pharmacies (whole numbers) August 2018
1	83	4,637	83	4,702
2	3	168	3	170
3	7	391	7	397
4	3	168	3	170
5	3	168	3	170
6	1	56	1	57
Rounded total		**5,588**		**5,666**
Correct total		**5,587**		**5,665**

Email communication, PGA, 2017–8 [64, 65, 81]

There is an obvious mismatch between the number of pharmacies, pharmacists and the population, that is evident in this geographical spread of pharmacy services, 17% of pharmacies service nearly 30% of Australia's population [8, 65].

2.2.2 Activities of pharmacists

Pharmacists have been working as a profession for many centuries, first as herbalists, then as apothecaries, then pharmaceutical chemists before the nomenclature 'pharmacist' became widely accepted. Initially taught by an apprenticeship system, a university course is now the accepted form of study in most countries, allowing a

pharmacist to own and/or manage a pharmacy. However, this is not always the case, and in some countries unqualified shopkeepers can still sell unregulated drugs in medicine shops.

In 1979, Eaton and Webb [82] reviewed the development of pharmacy as a profession using older papers by McCormack, in 1956, in which he suggested pharmacy was a 'marginal profession'. Ten years later, Denzin and Mettlin (1968) [83], concluded pharmacy was an 'incomplete profession'. The association with trade and industry 'muddies the waters', as to whether role of pharmacy practice is professional or commercial. Moving on, Eaton and Webb [82] suggested the 1971 Royal Commission on the National Health Service in Great Britain recommended an expanded role for pharmacy, one that was beyond the current dispensing and compounding activities, to one of direct contact with patients. It was also proposed that retail pharmacists could give advice and treat 'minor ailments', but not diagnose or prescribe. Throughout this time, medical practitioners could still dispense in Great Britain, but this option was limited to those in rural areas. Today, this is still current practice [84, 85], if no pharmacy is within a mile of the dispensing doctor's practice. A change has been suggested, and in 2016, it was promoted that with 'tact and diplomacy' the medical practitioner could be persuaded to use the skills of the pharmacy.

Holland and Nimmo in four papers (1999) [56, 86-88] suggested that there were five factors impacting on the role of the pharmacist in health care. Using information from the 1980s, these were:

> efforts to reduce drug costs, changes to market economy forces, changes in technology, increases in territorial competition from other professions, and reallocations of pharmacy staff

The authors suggested that threats to the profession came from:

- the increased availability of information to the consumer from sources other than the pharmacist
- the dependent role of the profession and its reliance on prescriptions
- lack of evidence to support the effectiveness of pharmacists' intervention
- the attempts by the profession to encroach into other health professional domains such as public health and medication reviews

However, this latter practice of public health and medication reviews is accepted today as part of the pharmacist's role. In 1999, these authors nominated two broad roles for the profession—technical and clinical. Nimmo and Holland (1999) [87] stated that even, in current times, the manual technical role continued to impact on the cognitive clinical role:

> Pharmacists outwardly reinforce other's expectations by their own perception of a limited professional role, thus making any change more difficult. Rigid structural barriers of the location of pharmacists—in a pharmacy itself and within the dispensary away from customers, payment of a supply rather than a service and reimbursement of payments support these obstructions to change in practice. [87]

The authors of this set of papers, concluded that pharmacy had resilience and flexibility, as demonstrated by the pharmaceutical care and self-care roles, but the profession needed to move on from a 'quasi-professional technical status to one of full professionalism'. This is something that many might argue, has still not happened today.

A few years later, in 2003, Taylor and Harding [89] espoused the same sentiments:

> The practice of contemporary pharmacy extends beyond pharmacists exercising their specialist drug knowledge.

In 2006, the WHO [90] together with the International Pharmacy Federation (FIP) developed the pharmacist activity role components, and called this the 'seven-star pharmacist'. The eighth arm, 'research', was added in 2006 [90]. The activities of a pharmacist are described in the following diagram (Figure 2.1):

Figure 2.1: The eight-star pharmacist (adapted from FIP 2006)

Developing pharmacy practice–a focus on patient care, World Health Organisation, 2006 [90]

Pharmacists are described, by the profession itself, as the most accessible health professional, because of the community pharmacy location, and its extended hours, thus giving the customer the ability to just walk-in for advice and professional service. Yet the profession is still generally perceived by others, as one of dispensing prescriptions only. Within the profession, delivery of professional services in the areas of chronic disease prevention and advice, or health promotion, are seen as secondary roles. In 2003, Berbatis et al. [40], suggested that community pharmacists spent on average 75% of their time in the dispensary and its associated activities, leaving little time for any other roles.

Therefore, inclusion of any additional services would require a change of professional direction, to include, e.g. primary health services or enhanced services, now called by the profession—professional services—as mentioned in the National Pharmacy Database Project [40]. In this database, it showed that the pharmacy did not differentiate between this service being the practice of the pharmacist him/herself, or

one using unqualified staff, in for example, the area of weight loss. Using the example of the advertisements for 'Weight Loss Consultants' for the Tony Ferguson Diet, the consultants needed no qualifications, and would be trained, and did not require any prior experience in this area, according to Adams in 2007 [91, 92]. At the time of the advertisement, pharmacists were not considered suitable, or necessary, for this particular weight management role, confounding delivery expectations of professional services in the pharmacy.

The role of the pharmacist has expanded from a traditional dispensing role, which is also still the definition supplied by many common dictionaries, to one of medication management and pharmaceutical care [61]. Current expanding and future roles also include those in public health, population health and community health, medication reviews, disease state management and screening activities, and 'collaborative prescribing'. There are many models of pharmacy practice outside the community pharmacy such as roles in general medical practices, community health centres and in public health. Some specific Australian models include services in Aboriginal communities by practitioners such as 'Robbo' [43], who provides medication reviews and extended support in the Ngaanyatjarra Health Service in WA, Freeman et al. [41] in the role of the non-dispensing pharmacist providing patient-level, clinician-level and practice/system-level activities in a general medical practice or Huxhagen [42] in integrating care and targeting self-management for patients with pain as part of the Mackay Pain Support Group.

However, in Australia, the factors of the competitive threat of deregulation of pharmacy ownership, recruitment and retention of staff, the financial pressures to run a successful business, and the accompanying legal and professional requirements, overshadow a potential change and expansion to many pharmacists' roles. Surviving as a business is typically to the fore for any community pharmacy and its staff.

2.2.3 Consumer perceptions and satisfaction of community pharmacy service

Customers are the basic requirement for a financially viable business, whether this be in a rural or urban community pharmacy, or any other form of pharmacy practice. The aspects of satisfaction, expectations, external opinions and perceptions of customers,

will now be discussed further, as it is suggested in some popular pharmacy literature, that these could differ between metropolitan, urban, regional, rural, and remote practice. The results of some consumer surveys will be used later in this thesis to test this premise.

Patient satisfaction is a combination of the expectations and perceptions of services rendered [93]. The measurement of satisfaction is service-driven, including tangible matters and motivated factors such as waiting times, provision of information, layout of the pharmacy or friendliness of staff. Various authors believe patients only comment on the service they have received, and not any additional services that could be expected in a community pharmacy practice. The PGA maintains pharmacists are one of the most trusted health professions, and their research over time, has shown that 95% of patients were satisfied with their pharmacy [1, 94, 95].

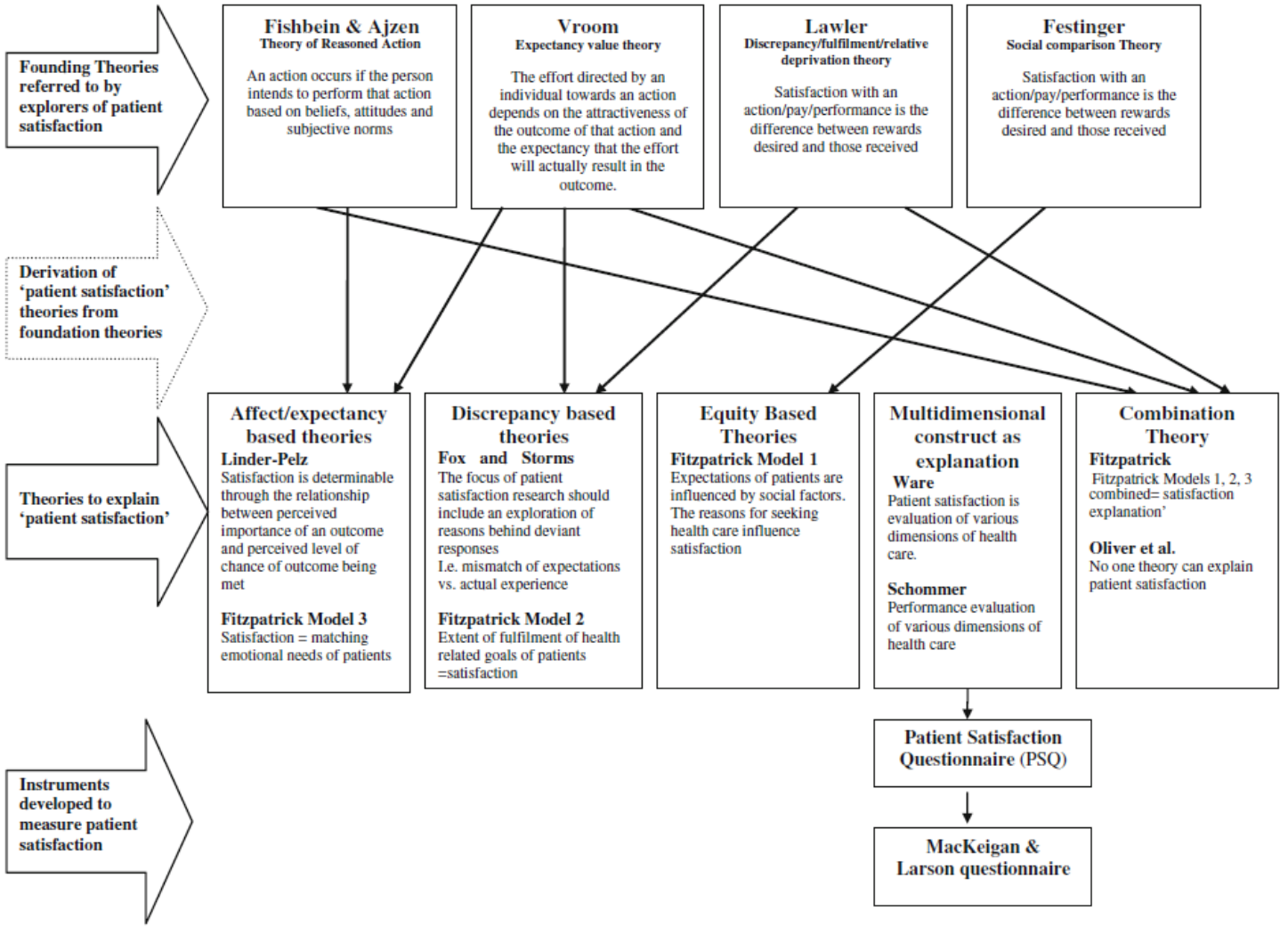
Public perceptions and patient satisfaction with pharmacy practice have been investigated by observation of practice, and by surveys of patient opinions of practice. Aslani et al. (2009) [96] quoted the work of Heffernan et al. (1993) [96], which investigated Australian public perceptions of pharmacy practice. One of their conclusions was that the customer's own experiences shaped their expectation of practice. They also suggested pharmacists have a lot to offer in an advisory role in health education and health promotion but this role, albeit positive, was defined by existing customer knowledge.

The other requirement for patient satisfaction is in relationship marketing—finding out if the patient wants the service offered in the pharmacy. The traditional 4Ps of marketing are used—product, price, promotion, place and a fifth, positioning change, with cognitive or service approach compared to a 'material good' [97]. An example is a cognitive service, the product, its price, promotion and place are self-explanatory, and positioning identifies the niche that makes the product attractive to patients who come to the pharmacy.

Panvelkar et al. [98] in 2009, reviewed the literature of the measurement of patient satisfaction in community pharmacy and developed a theoretical framework, taking into account the various theories proposed by a number of authors, but without accompanying marketing components. The diagram below (Figure 2.2) shows the

complexity of factors and the various theories involved in patient satisfaction investigations, and acknowledged that more than one theory was needed to attempt to explain the many factors involved with patient satisfaction research.

Figure 2.2: Theoretical patient satisfaction framework developed by Panvelkar, Saini and Armour 2009



Measurement of patient satisfaction with community pharmacy services: a review, Panvelkar et al., 2009 [98].

The usual method of elucidating the consumer view is by survey or interview. Overseas, early survey data on patient satisfaction [99] investigated access to care, financial aspects, availability of resources, continuity of care, technical competence, interpersonal manner and overall satisfaction. Later, Schommer and Kucukarslan [100] in 1997, developed a pharmacy-specific satisfaction measurement model. This work, was based on patient satisfaction on performance, expectations, emotional response to assessment, and perception of fairness of assessment. Using some of the concepts above, prior experiences, ideal referents or market-based expectations were investigated by Kucukarslan and Schommer in 2002 [101]. They sought to differentiate patient satisfaction on cognitive services (information) or tangible aspects of the services (pamphlets, waiting time).

More recent work by Kassam et al. (2012) [102] looked at satisfaction with pharmaceutical care consultations of at least 15 minutes, which discussed medical concerns, including those about medication, care plan interventions, and monitoring. Although surveys were sent to rural and urban locations in Canada, no location differential analyses were found. The differences found were store-to-store only. Pleasant and courteous staff, privacy, and explanations, were some of the expectations for customers in a pharmacy for satisfactory pharmaceutical care. However, these could be considered as expectations in all satisfaction surveys.

The role and consumer perceptions of the pharmacist has also been studied. The opinions of community pharmacy patients in Portugal were tested using semi-structured interviews (15) and focus groups (28 participants) by Cavaco et al. (2007) [103, 104]. The actual role of the pharmacist was described from one who was a 'health professional', to a 'mercantile professional', to one who is 'randomly present with minimal responsibility'. Customers thought of pharmacists on a 'product level', not in a primary or public health role, and one who did not have professional duties, but acted to 'counterbalance perceived deficiencies, from other health care providers'.

Pharmacies generally do not provide surveys, undertake focus groups, or promote their services to customers, in order to find out what sort of services the customer would like, and would subsequently use, in the pharmacy. This is distinct from brief satisfaction surveys undertaken in and about current practice. Best practice was considered to be

consulting and comparing pharmacy performance with other pharmacies, to identify 'service' gaps [102]. The authors noted that asking if services or practices were 'satisfactory', did not provide an 'anchor' to compare the transaction experience against any expectations with other pharmacies.

Surveys testing consumer's opinions of pharmacy practice and satisfaction with service in Australia include the 4CPA survey in Appendix 4, and the PCHCM survey in Appendix 5. There are also many marketing surveys promoted in the popular pharmacy literature, usually showing customers like a particular pharmacy group, without any depth of information or detail about the services being tested. The focus in the Australian 4CPA survey is on the pharmacy itself, including waiting times, opening hours, greeting received and confidence in staff, and availability of products. Only three questions related to professional information and explanations provided by the pharmacy, services, illness prevention and staying healthy messages. Consumers were asked if they were satisfied with the pharmacy with a simple Likert scale from poor to excellent, without a neutral option. In this survey, there was no differentiation of 'pharmacy staff', into assistant, technician or pharmacist. This survey was given opportunistically to customers by the staff.

The PCHCM consumer survey did question a randomly selected group of consumers about the features that attracted them to a pharmacy. It then asked about various professional services, whether the pharmacy was capable of providing these, and if the consumer would use them. This latter survey not only used satisfaction data, but service use data to test if the consumers would use a particular professional service should it be offered or if available. The results of both surveys will be analysed later in this thesis.

Customer satisfaction survey literature reviewed thus far, was used to gain information about the present pharmacy roles and the services provided, roles and services known to the consumer. Most did not investigate potential expanded or future roles and opportunities within the profession, or in the retail community pharmacy itself. Many provided a simplistic response option only. Any potential differences between rural and urban practice was not a focus of the papers and reports reviewed thus far.

2.3 Governance and standards for pharmacy in Australia

Governance and standards underpin all pharmacy practice in Australia. The profession of community pharmacy is regulated, and supported by, the Pharmacy Board of Australia and the Australian Health Professional Regulation Authority (AHPRA), and the professional organisations, the Pharmaceutical Society of Australia (PSA) (which in 2016 had 41% of the registered pharmacists as members) [105], the Pharmacy Guild of Australia (PGA) (representing owner pharmacists) and the Society of Hospital Pharmacy (SHPA) (representing, and not restricted to hospital pharmacists). Some pharmacists are members of more than one professional organisation. In all, there were 28,065 general registered pharmacists in March 2018 [106]. Pharmacists with inactive, provisional and limited practice were excluded in this figure. Further discussion on the demographics of the profession will take place in the section on the pharmacy workforce later in this chapter.

The 5,665 community pharmacies [1] in Australia, continue to be owned by pharmacists, Friendly Societies and some corporations of pharmacists and/or relatives of pharmacists. Each pharmacist can only have an interest in or own, a maximum of 4–5 pharmacies per state. Thus, one pharmacist may own up to 40 pharmacies (8 states and territories in Australia). However, the reality is that there are major buying groups (e.g. Terry White Chemmart), with approximately 500 pharmacies [107, 108], and the franchised model conglomerations (Chemist Warehouse, My Chemist), with approximately 330 pharmacies [109] with fractional ownership by many pharmacists, but with a core leadership group. Other owners use companies such as Pharmacy Alliance (650 member pharmacies) [110], to assist in differing levels of pharmacy management and retail services. In 2014, in Australia, less than 11% of pharmacies were regarded as truly independent [111], and not affiliated with any buying or brand group.

2.3.1 The organisations and professional bodies controlling pharmacy in Australia

There are many professional organisations listed below, that control, guide and represent the pharmacists themselves in the variety of practices and locations in Australia.

2.3.1.1 Pharmaceutical Society of Australia (PSA)

The PSA describes itself:

> As the peak pharmacists' body, we lead and support innovative and evidence-based healthcare service delivery by pharmacists [112].

PSA's mission is achieved through the following objectives:

- PSA ensures pharmacists have the opportunity to have rewarding careers through advocacy and innovation
- PSA provides lifelong professional support for pharmacists and the pharmacy profession, and advocates for their appropriate recognition and remuneration
- PSA has a strong and engaged membership base which supports and enhances the Society's influence
- PSA values its people, and applies best practice management and governance to ensure organisational effectiveness and sustainability [112]

It's vision currently is:

> Improving Australia's health through excellence in pharmacist care [112].

Formed as a federation of state societies in 1997, PSA has undergone the process of becoming a national organisation [113]. It was awarded 'peak' body status in 2016 by the Australian Government Peak and Advisory Bodies Program [63]. It is the only pharmacy organisation to sit on the NRHA, the peak body of national organisations promoting good health and wellbeing in rural Australia.

2.3.1.2 Pharmacy Guild of Australia (PGA)

The PGA, established in 1928, originally considered the peak body for pharmacy, represents community pharmacy owners in Australia [114]. It is the principal negotiator of the CPAs, which shapes much of the financial income of the community pharmacies themselves, through the PBS, and related Community Pharmacy Programs (CPP) [33]. Managed by the PGA, is the Rural Pharmacy Support Program, which supports pharmacies and those practitioners in rural practice.

The PGA describes itself as:

> The Pharmacy Guild of Australia is a national employers' organisation with over 80

years of experience in representing and promoting the value of the role of community pharmacy in the Australian health care system. Community pharmacies are a vital part of our national health system with the potential to make an even bigger contribution to the health of all Australians [115].

2.3.1.3 Society of Hospital Pharmacists' of Australia (SHPA)

SHPA was formed in 1941 in Victoria, is the professional body which maintains 'excellence in medicines management' [116, 117], for those in, or have an interest in, hospital practice or other health care settings. Pharmacists in this organisation often provide input for the profession as an allied health profession, when the retail community cannot [73].

2.3.1.4 Other organisations

Professional Pharmacists Australia (PPA) [118] represents pharmacists, and is a union focused on workplace conditions and career progression, for employed community pharmacists in Australia. Although a respondent to the Pharmacy Industry Award (2010), which covers both community pharmacist employers and employees, except those in hospitals or government, this organisation does not enjoy a wide pharmacist membership.

2.3.2 Standards of practice and codes of conduct in Australia

Overarching the professional practice of community pharmacy in Australia, whether it be in urban or rural areas, is legislation, the codes of ethics, competency standards and professional practice standards. The Australian Pharmacy Board also publishes codes, guidelines and policies to support practice. The schema in Table 2.2 below from the current PSA Code of Ethics (2017) [119], shows the order and linkage of the legal and guiding documents for the profession in Australia.

Table 2.2: Hierarchy of pharmacy practice guidance in Australia (PSA)

A	**Legislation: Federal, State and Territory**
B	Pharmacy Board of Australia: Registration standards, codes and guidelines
C	Code of ethics/codes of conduct
D	Competency standards
E	Professional practice/quality standards
F	Professional/practice guidelines

Code of ethics for pharmacists, Pharmaceutical Society of Australia, 2017 [119]

2.3.2.1 Codes of ethics and conduct

Both PSA and SHPA have codes of ethics for the profession, valid in any form of practice or location. The original PSA Code of Conduct, stated that pharmacists should uphold the health and wellbeing of the community and 'clients' with confidentiality, display current competence, uphold the reputation of the profession and co-operate with other health professions to optimise health outcomes [120].

The PSA Code of Ethics, revised in 2017, encourages patient-centred care, as well as a community focus in ethical practice [119].

2.3.2.2 Competency standards for pharmacists in Australia

Competency standards for entry-level pharmacists in Australia were developed initially by PSA in 2003 [58]. Although some previous versions existed, this particular version gained widespread acceptance within the profession, and was used as a blueprint for pharmacy practice and education. The eight domains of practice for a pharmacist were supported by multiple standards and performance criteria. Some of these criteria were compulsory, and some desirable. An updated version was published in 2010 [121] and reviewed in 2014 [122]. In 2017, the 2016 National Competency Standards Framework for Pharmacists in Australia [57], was released with now 6 domains of competency in practice, to set the new standards for all registered pharmacist practitioners.

2.3.2.3 Professional practice standards and guidelines

Version 5 of the PSA Pharmacy Professional Practice Standards was released in 2017

[62]. Described in this document, are the basic tasks that a pharmacist carries out within their professional scope and activities, and the associated levels of practitioner proficiency. Not all pharmacists would carry out all activities. Some, such as those in health promotion, are overarching, and others are more specific, such as cytotoxic medication dispensing. All pharmacy activities and professional services should adhere and practice to the levels described in these standards.

Each professional pharmacy organisation has also produced guidelines for specific activities within the pharmacy, or those undertaken by the pharmacists, in or outside the pharmacy itself, whatever the location.

Other countries have similar standards and policies to guide community pharmacy practice. In addition to the documents developed by the profession in Australia, many of the activities of community pharmacy practice itself are set by the components of the current CPAs.

2.4 The Community Pharmacy Agreements

CPAs in Australia, dictate the amounts that community pharmacy and pharmacists can be reimbursed, or paid, for various services both within and outside the pharmacy premises. Negotiated between the Commonwealth Government Departments of Health (the name dependent on that of the time) and the PGA, these agreements have guided the profession for nearly 30 years since 1990. Prior to the agreements, prices for dispensing, mark-up and pharmacy rebates for prescription medication were negotiated on an ad hoc basis, since the beginning of the PBS in 1948 [123]. The PBS was originally introduced to cover costs to the public, of life-saving and disease preventing drugs. The agreements have evolved and provide support for all community pharmacy practitioners, and some of these components have changed markedly over the years.

2.4.1 1st, 2nd, and 3rd Community Pharmacy Agreements

In Australia, the PGA and the Commonwealth Government have negotiated six five-year agreements to set dispensing fees and other pharmacy services. Over the years, various other parties have come to the table to assist in the negotiation of these agreements, but always the final pharmacy signatory, has been the PGA.

The initial agreement was signed in December 1990, between the Minister for the Department of Community Services and Health and the PGA [72]. It focused on dispensing fees, mark-up of medication and information for consumers to be made available regarding price, new pharmacy approval numbers, pharmacy closures and/or amalgamation packages. Support was introduced for pharmacies in rural areas. This took the form of an essential pharmacy allowance to ensure provision of, and access to, pharmaceutical services. It was given to the pharmacy when the distance to the nearest pharmacy was greater than 10km by road, and the pharmacy was open at least 20 hours per week.

The Second Agreement, between the Minister for the Department of Human Services and Health and the PGA was signed in April, 1995 [71]. The Community Pharmacy Authority was established, to make recommendations on approvals and relocations, payment of Isolated and Remote Pharmacy Allowances, and payment of supplementary allowances for additional professional services. The Authority committee consisted of a chairperson, two members of the PGA, one member of PSA and an officer of the Department [71].

The Isolated Pharmacy Allowance (IPA) was paid to pharmacies, which were in 'isolated and rural areas' to provide a better access to the PBS. The criteria to determine these pharmacies was:

> 5.4 Eligibility for the payment if the IPA will be that the shortest lawful access route from the applicant's pharmacy to the nearest other approved pharmacist, measured door to door, is equal to or greater than 10 kilometres [71].

The allowances paid were, if the 'shortest lawful route' rule qualified, and ranged from AUD$1,041 (25km to less than 40km); AUD$1,724 (not less than 40km and less than 60km) to AUD$2,839 (not less than 60km, or an island not connected by road).

Other dispensing and relocation components were similar to those in the first agreement. Additional 'professional services' in primary health care, also attracted a payment.

The Third Agreement (3CPA) in 2000, again between the Minister of the Department of Health and Aged Care and the PGA, was the first to expand the community pharmacy

role. The principles were:

a) providing consumers with reasonable equality of access to quality pharmacy services in their local community
b) ensuring that consumers receive quality patient care and outcomes
c) expanding community pharmacy's professional roles
d) providing a stable and predictable environment for community pharmacy
e) extending the cooperative approach evident in the first two Agreements between the Guild and the Commonwealth
f) maximising the value to the taxpayer by encouraging an effective and efficient community pharmacy network [67].

The objectives of the agreement specified increased access to provision of pharmacy services in rural and remote areas. The use of medication reviews and primary health services helped achieve a multidisciplinary approach to health and pharmacy services, to ensure a viable community pharmacy network. Again, PBS remuneration for prescriptions was the primary focus of the agreement.

Funding allocations for rural pharmacies used the ARIA system, until the PhARIA system was introduced in 2000 [40]. Rural initiatives to the value of AUD$74m, over the five-year course of the agreement, were introduced, and paid to approved pharmacists and pharmacies. The workforce programs included encouragement of recruitment and retention of approved pharmacists. There were three additional allowances, the Rural Start-Up Allowance, Succession Allowance and the Pharmacy Maintenance Allowance, with the amount dependant on remoteness and script volume. The Rural Pharmacy Workforce Development Program (as it was known) included a number of initiatives:

> an emergency locum scheme, the rural and remote infrastructure scheme, scholarships for pharmacy students from rural and remote areas, academic positions at the University Departments of Rural Health, the continuing education scheme, and identification and recruitment of pharmacists from an Aboriginal or Torres Strait Island background

According to the agreement, a review was to take place after the third year of the agreement. This review was never publicly released.

In this agreement, the Pharmacy Development Program provided AUD$15m in research

funds, and a further AUD$114m was allocated to Medication Management Services (residential aged care services, domiciliary medication reviews, case discussions and care planning, and provision of pharmacy facilitators in Divisions of General Practice). The Quality Care Pharmacy Program (QCPP) for quality improvement started with this agreement.

2.4.2 4th Community Pharmacy Agreement (4CPA)

The 4CPA began in 2005 [69], with amendments in 2007 [124]. There was specific program funding for Medication Management Reviews (AUD$150m) and the Rural Pharmacy Allowance and Support Program (AUD$111m).

Priorities agreed for the Rural Pharmacy Allowance were:

a) rural pharmacy maintenance allowance
b) new pharmacy start-up and support allowance
c) succession planning and incentives: a, b, c in total AUD$25.3m
d) rural pharmacist pre-registration incentive AUD$10.4m
e) rural pharmacy workforce program AUD$25.3m [69].

Better Community Health allowances (AUD$192m) and the supplementary funding were used to build on the asthma and diabetes research from the previous agreement, in order to incorporate what was previous seen as additional pharmacy services, into 'mainstream care'.

Also included were payments for dose administration aids (DAAs), activities related to prevention of communicable diseases, counselling for emergency contraception, medication profiling for patients, practice change and education incentive, research and development, and other projects 'as decided'. Price disclosure was also introduced.

The relocation and opening of new rural pharmacies had strict guidelines to ensure access to community pharmacies, for those living in rural and remote areas of Australia.

2.4.3 5th Community Pharmacy Agreement (5CPA)

The 5CPA in 2010 [68], reiterated the importance of community pharmacy in primary health care, and the need for accessible and viable pharmacies in rural and remote Australia. A total of AUD$15.4b was negotiated with the Commonwealth Government

for this agreement.

The Program Reference Group providing advice to the Agreement Consultative Committee (ACC), which guided expenditure, had changed to incorporate two members from the ACC (one member representing the PGA, one as Chair representing the Department), one from each of PSA and SHPA, and three members having expertise in the following areas: practicing in rural pharmacy, health economics and program evaluation. There were an additional six members appointed by the minister including a consumer, a representative from Aboriginal and Torres Strait Island primary health care, and representatives from allied health and general practice.

The professional programs (AUD$386,413m) included Medication Management Programs (Medicine Review and Diabetes Management), Rural Support, Aboriginal and Torres Strait Islander Programs, Pharmacy Incentive and Accreditation, Research and Development, and Medication Continuance. In this agreement, AUD$37m was allocated to the Rural Pharmacy Workforce Programs (as it was known), and AUD$70m to the Rural Pharmacy Maintenance Allowance. This was a decrease in allocation.

2.4.4 6th Community Pharmacy Agreement (6CPA)

The current agreement, the 6CPA [33], was signed in 2015 and valued at AUD$18.9b. The parties who signed the agreement, the Department of Health and the PGA, no longer listed rural and remote pharmacy as a specific 'common interest'. The CPP (AUD$613m) was expanded in allocation. Two of the foci listed were Aboriginal and Torres Strait Islander peoples, and consumers living in rural and remote areas. Rural Support Programs were allocated AUD$6.9m, and AUD$14.3m for the Rural Pharmacy Maintenance Allowance, a decrease of AUD$85.8m (80%) from the previous agreement. There is no ongoing broad workforce group to provide input; rather this was negotiated at the time of the signing of the agreement, as part of the CPP section.

The agreement suggests that:

> Both parties acknowledge that input and support in the design and implementation of Community Pharmacy Programmes is expected to utilise involvement from a range of stakeholders and bodies from the public, pharmacy, pharmaceutical and medical sectors [33].

The agreements guide the funded activities of community pharmacy practice in Australia. All other activities within the pharmacies would be supported and funded by management, and ultimately by the owners of the business. These include services that may be free to customers, community and public health initiatives, or those provided on a cost recovery basis, or other services developed with the intent of profit.

Various investigations carried out in the course of this thesis, have used data from the times of the 3CPA, 4CPA and 5CPA, to examine changes and activities unique to rural pharmacy.

2.5 Rural pharmacy position statements, policy, reports and frameworks

Policy and frameworks, specific to the rural pharmacy profession, have been developed by some of the professional organisations. Rural pharmacy support is part of the various CPAs and consists of a number of programs designed to support rural community pharmacies, undergraduates and the professional development needs of rural pharmacists [125, 126], as previously described.

The latest PGA position statement, Access to Community Pharmacy Services in Rural/Remote Australia (2012) [125], stated all Australians should have equity and access to community pharmacy services, and cited a number of programs managed by them at the time. The PGA currently receives strategic advice from the Community Pharmacies for Rural and Indigenous Australia Advisory Group and Rural Pharmacists Australia on national rural issues [126].

PSA has a position statement on Improving Access to Pharmacy Services in Rural and Remote Areas (2009) [127] and mentions a number of areas for improvement such as alternative models of service provision, a business rule review, and funding to allow more rural and remote programs within Schools of Pharmacy. This has not been updated, but PSA supports rural pharmacists by using submissions, advocacy, and providing professional development opportunities [63]. The PSA Federal Budget Submission Senate Inquiry (2017–8) [63] promoted an amendment in funding arrangements, to allow rural pharmacists to participate in a minor ailments scheme, as well as primary and public health initiatives. PSA cited the Grattan Report (Access all areas: new solutions for GP shortages in rural Australia) [55] as suggesting rural

pharmacists could diagnose, treat and refer, especially after hours, services that would assist in medically underserved areas. PSA as an organisation, receives advice from its PSA Rural Special Interest Group, a rural pharmacist support and information network for members of the organisation.

SHPA does not have a specific rural position statement or policy [128] but mentions rural and remote services, under the position statement for pharmacists working in interdisciplinary teams (2015) [129]. It has a rural practice arm providing additional services such as representation of some national committees (Rural Pharmacy Workforce Advisory Committee (now non-operational), and the Allied Health Professions Rural and Remote group.

In 2014, the NRHA commissioned a discussion paper looking at access to medicines and pharmacy services for rural and remote Australia [130]. Data in the report was not available to clearly show the specific lack of services in rural and remote areas. However, issues to be explored further were:

1. improving advice, information and review of medicines for people in more remote locations or marginalised situations:
    - professional medicines review, registered locations and pharmacy depots, non-medical prescribing by pharmacists, supply of medicines to Aboriginal Health Services (AHSs) under Section 100 arrangements, transport, pharmacy technicians and Aboriginal Health Workers
2. improving access of people in rural and remote areas to pharmacies and pharmacists (i.e. a workforce numbers issue):
    - enhancing opportunities for and reporting of young pharmacists to work in rural and remote areas, PhARIA and the '8 pharmacy rule' (these rural pharmacies will always be classified as PhARIA 1 because of their proximity to other pharmacies)
3. and data reporting issues:
    - dispensing and supply of medicines, information to quantify prescribing [130].

2.6 The Australian pharmacy workforce

The rural pharmacy workforce is crucial to the survival of rural and remote community pharmacy. This section will describe changes to the pharmacy workforce in Australia over time, the differences, and the factors that might affect the future workforce of

pharmacy.

2.6.1 The current workforce

In March 2018, there were 30,984 pharmacists of whom 28,065 (90.6%) were general registered pharmacists with the balance having provisional, limited or non-practicing registration [106]. Nearly two-thirds (62.2%) of general registered pharmacists, were women (17,466 female: 10,599 male).

The number of general registered pharmacists, and thus those being eligible to work independently, has increased slowly over the past 5 years. Using the second last and last columns representing the same time frame in Table 2.3 below, the numbers of general registered pharmacists have increased by 681 (2.4%, 27,384 to 28,065) between March 2017 and March 2018. Assuming all provisionally registered pharmacists (excluding those on limited registration and non-practicing registration), proceed to full registration, in 2017, the number of pharmacists would be expected to be approximately 29,193. However, in March 2018, there were only 28,065 general registered pharmacists, a 'loss' of 1,128 pharmacists in one calendar year. Presumably, some have retired and/or left the profession, but this data shows that there is only a slight increase in registered pharmacy practitioners annually.

Table 2.3: Registered pharmacists in Australia 2012–2018

Registration type	Dec 2012	1 Oct to 31 Dec 2013	1 Oct to 31 Dec 2014	1 Oct to 31 Dec 2015	1 Oct to 31 Dec 2016	1 Jan to 31 Mar 2017	1 Jan to 31 Mar 2018
Total registrants	26,434	27,560	28,883	29,751	30,368	30,287	30,984
General registration	24,741	24,867	26,096	26,905	27,452	27,384	28,065
Provisional registration	1,770	1,763	1,724	1,751	1,777	1,809	1,794
Post graduate training or limited registration	10	13	16	13	7	6	9
Non-practicing registration	904	917	1,047	1,082	1,132	1,088	1,116

AHPRA annual general reports, statistics and newsletters [106, 131]. Not all data was available in exactly the same timeframe.

Data from the AIHW, broke down the spread of pharmacists, but the latest available dataset was from 2014, and published in 2016 [2]. There were 28,751 registered

pharmacists in Australia with 85.1% (22,500) employed in a pharmacy field, excluding provisionally registered pharmacists [2]. Six in ten of those employed were women, and the average number of hours worked per week was 35.6. In major cities, the full-time equivalent employment rate for all pharmacists was 96.8%, in inner regional areas it was 73.6%, outer regional areas 77.3% and in remote/very remote areas down to 57.7%. This data used the Australian Bureau of Statistics Census of Population, which used the ASGS system. About 90% of the 22,500 employed pharmacists (19,792: 88%) considered themselves as clinicians, with no data available to separate the setting into community, hospital or into 'other' practice. The remaining pharmacists in the report, identified themselves as an administrator, teacher or educator, independent consultant or 'other' (1972; 12%) [2]. This data was not divided into work location, such as that in a rural or urban community pharmacy.

In 2012, more women than men worked in Major Cities, in Inner and Outer Regional areas, but this trend decreased the more remote the location as can be seen in Table 2.4 below. Pharmacists in remote and Very Remote areas worked an average of 40.6 hours per week [132], approximately five hours per week more than their Major City counterparts.

Table 2.4: Pharmacist work characteristics in geographical areas of Australia 2012

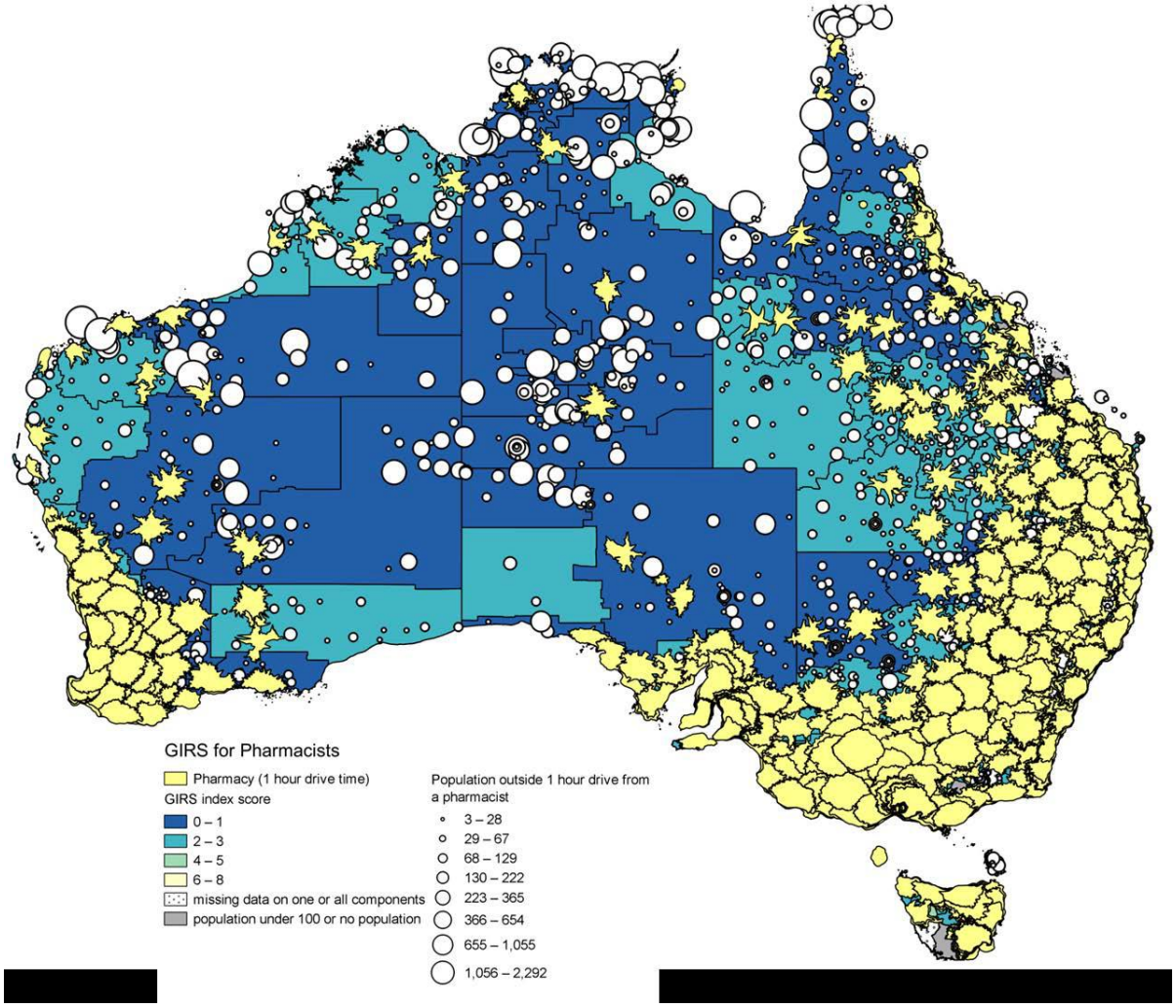
Characteristic (ASGS)	Major cities	Inner regional	Outer regional	Remote/ very remote	Total
Number of pharmacists	76.1%	13.3%	7.1%	1.3%	100% (21,331)
Average hours worked per week	35.7	35.9	37.3	40.6	35.9
Number of women	59.9%	52.6%	53.8%	51.6%	58.2%

Allied health workforce 2012, AIHW, 2013 [132]

In 2014, pharmacists were still in short supply in very remote areas of Australia. The map below (Figure 2.3) [19], indicates in yellow, the areas where the consumer has a one-hour or less drive to the pharmacy. This figure used the GIRS model, together with 2014 workforce data, population dispersion, land size and proximity to services. In this country, 0.79% of the population are more than 1 hour's drive to a pharmacy in a remote area. Inland areas have fewer community pharmacies, and consequently less access to services. It should be noted that some of the remote area services use the

Section 100 pharmacy supply program.

Figure 2.3: Map of pharmacist GIRS scores, by SA2, with drive time boundaries and mesh block populations added



Spatial distribution of the supply of the clinical workforce: Relationship to the distribution of the Indigenous population, 2014, Figure 6.3 , AIHW,[19]

The GIRS model is one of workforce supply, not service provision. As can be seen in Table 2.5 below, the pharmacy profession, although in short supply, was not as scant as midwives and optometrists in rural and remote Australia [19]. Overall, however, was still a lack of pharmacists and pharmacies in some areas of rural Australia, to provide an adequate service for its population.

Table 2.5: Spatial distribution of the supply of the allied health clinical workforce in Australia 2014

Table 10.1: Number of SA2s, by GIRS score and profession

GIRS score	GPs	Nurses	Midwives	Pharmacists	Dentists	Psychologists	Optometrists
0–1	39	17	120	45	43	49	56
2–3	397	436	364	391	396	400	365
4–5	834	808	723	750	748	687	776
6–8	822	831	884	906	905	956	895
Total	**2,092**	**2,092**	**2,091**	**2,092**	**2,092**	**2,092**	**2,092**

Notes

1. Includes only SA2s with resident populations of at least 100 people and valid data on all 4 GIRS components.
2. Scores of 0 and 1 indicate a higher probability that an area faces supply challenges compared with areas with higher GIRS scores.
3. As noted in Chapter 5, there are only 2,091 SA2s with valid midwife GIRS scores.

Spatial distribution of the supply of the clinical workforce: Relationship to the distribution of the Indigenous population, AIHW, 2014 [19]

Moving forward to 2017, according to state-based employment departments [133], as shown in Table 2.6 below, there was still an identified lack of pharmacists, in some rural and regional areas of Australia. Regional areas with staff shortages were Tasmania, Queensland, South Australia and the Northern Territory. Other rural areas did not appear to have shortages. Victoria was the only state with an improvement from 2016, while in 2017 Tasmania now had difficulty recruiting regional pharmacists. As shown in the table, Victoria only filled 30% of regional positions but had no shortages, and South Australia filled 25%, and continued to have a regional shortage.

Concerning was the number of applicants that were deemed unsuitable. In NSW, 79% of applicants fitted this category. The reasons given by the employers in any area were as follows:

- not qualified as a pharmacist (AHPRA registration)
- lack of experience in hospital or retail—hospital employers thought retail pharmacists were unsuitable to work in a hospital environment as they had non-transferable skills
- lack of soft and customer relations skills, poor interview, poor team fit
- lack of willingness to work the hours required or work on a casual roster which included extended hours, evenings or weekends
- newly registered and therefore seen as lacking experience
- limited English skills from overseas trained pharmacists

Table 2.6: Hospital and retail pharmacist labour force vacancies in Australia June 2017

State/ Territory	2016	2017	Metropolitan: filled	Regional: filled
Australian Capital Territory (ACT)	No shortage	No shortage	71% overall	
New South Wales (NSW)	No shortage	Metropolitan shortage	50%	88%
Northern Territory (NT)	Shortage	Shortage	73% overall	
Queensland	Regional shortage	Regional shortage	89%	57%
South Australia	Regional shortage	Regional shortage	100%	25%
Tasmania	No shortage	Regional recruitment difficulty	100%	Regional areas unfilled
Western Australia	No shortage	No shortage	57%	

Hospital/retail pharmacists occupational reports, Department of Small Jobs and Business, 2017 [133]

It should also be noted that the vacancies did not differentiate between a highly skilled oncology pharmacist, in a hospital setting, or a community pharmacist generalist, in a regional or rural setting. Other data found about recruitment shortages, have been opinion pieces. This departmental data in Table 2.6 was an analysis of job advertisements, and so may not represent the true shortages. This also does not give an indication of shortages commensurate with the PhARIA or other classification system areas.

Currently, pharmacist data in Australia is gathered by annual surveys filled on registration by pharmacists. Previously, the research arm of the CPAs conducted research into the community pharmacy workforce. Most data found was two or more years old when available, and detailed data was limited for those practicing in rural areas. In addition, systems other than PhARIA were used for workforce analysis thus making a realistic comparison difficult.

2.6.2 The rural pharmacy workforce, practitioner characteristics and possibilities

Many papers have been written about the characteristics of rural practitioners and

personal experiences by the rural pharmacists themselves. In 1993, Mahony [80] suggested that rural pharmacists have extensive community involvement and often act as a coordinator of other allied health services. Their catchment area is over a wide geographical area. The 'other' activities listed in this publication, are those any community pharmacist would undertake in the course of everyday business. Later in 1997, he suggested that:

> Rural Australia is the best place to be a pharmacist...We are used to working together. We are used to being multi-skilled and we are used to adapting things to make them work [134].

Various countries have an expanded role for rural pharmacists, compared to that in Australia, allowing them to practice in such a way that is supported by both other health professionals and the public [135].

In 2007, in Australia, interviews [136] were used to investigate, the personal and professional factors affecting pharmacist's commitment to staying in rural and remote areas to practice. An ability to solve problems and feeling valued were key positive factors, but barriers included lack of peer support, inability to attend professional development and inadequate social and cultural facilities. Also in NSW, the factors impacting on recruitment and retention in pharmacy were investigated (2006) [137]. Previous experience or preference were factors in recruitment, and professional satisfaction and rapport in retention. A negative perception of rural practice by undergraduate students was noted. However, respondents emphasised many different aspects making an overall conclusion difficult [137]. The authors concluded that more research was required.

Rural practitioners may have specific characteristics that entice them to this style of practice. Following on from their work with undergraduate medical students, Eley et al. (2008) [138] found the following characteristics for those who wanted to work in rural practice:

> novelty seeking, harm avoidance, reward dependence, persistence, self-directedness, cooperativeness, and self-transcendence [138]

Rural background and a preference for smaller communities, were associated with

successful recruitment and retention, in the USA. Student loan relief and the availability of training programs encourage recruitment, but 'financial incentives, professional opportunities and desirability' were required for retention of health professionals [139]. Daniels et al. (2007) surveyed students from the south west of the USA about their proposed initial practice location, as well as possible retention factors. Spousal needs were not a recruitment incentive here. Student loan relief financed by the state was an incentive to rural practice. New Mexico (USA) offered USD$12,000 per year as a scholarship while a student, for those who intend to practice in under serviced areas of the state. Sufficient work, 'opportunity for professional experiences, income potential and the desire to serve community needs', were the drivers for any practitioner but the last reason, 'the desire to serve community needs' was more important to rural practitioners.

It has been shown that pharmacy students from a rural background were more likely to practice in rural areas (2009) [140], and completing a qualification in a rural area and a positive rural placement, were also significant factors in career choice. Much work has been done in this area for other professions, in particular medicine, to alleviate the shortage of doctors in rural areas. Monetary support and scholarships for students through the CPAs, has not translated into additional practitioners, as there are still gaps in the rural workforce.

In the Northern Territory, the use of social networks for new health professionals and their families, were used as additional recruitment and retention strategies, for the dental workforce in 2007 [141]. It was found that those who stayed for more than 5 years in a rural location, invested in housing, social and cultural activities. Conversely, if they were recruited with financial incentives, most appeared to stay no more than 5 years. Recently, in 2018, financial incentives for pharmacists have been promoted for the same territory. Classifying 'retail pharmacy' as a 'hard to fill' job, with the high priority classification [142], scholarships of AUD$3,000 for individuals and up to AUD$7,000 for families, to assist with moving and living costs. A 'local benefit' of AUD$1,250 is available for a 2-year stay, and further payment is offered if the health professional stays for 5 years [143]. Only available for ASGC-RA 3 to 5 areas, this does include the capital city, Darwin.

In 1998, in South Africa [144] an expansion for the role of the pharmacist practicing in rural and under serviced areas was instigated, which included patient examination and assessment, resuscitation, airway and/or intubation, intravenous and intraosseous cannulation [135]. For some, this may be too extreme a practice.

Reports such as the Grattan Report (Access all areas: new solutions for GP shortages in Rural Australia) (2013) [55] suggested expanded roles for pharmacists in rural and remote areas, to support the health workforce overall. Activities such as disease state management and immunisation, could assist doctors and others. Many of these suggested activities are currently taught in Schools of Pharmacy, so younger pharmacists have the skills but not the imprimatur.

The Canadian Review of Pharmacy Services in 2016 [145], looked at the economic evidence of various services. It was not the focus, but the conclusions do refer to potential practice differences for rural pharmacy:

> In terms of the operating environment (where pharmacists practise in the community), the pharmacist who practises in rural and remote areas and in smaller independent stores may face different challenges than their counterparts who practise in chain stores where there is often greater support and capacity for pharmacists to practise to expanded scope [145].

In this report, rural practice was equated to a pharmacist who might work in a smaller independent pharmacy, presumably in an urban or rural setting, implying size, not location was the difference. This assertion will be revisited later in this thesis.

Data using job advertisements described earlier in this chapter, may not represent the true shortage of pharmacists, if this exists. Recruitment and retention in rural areas has been studied, and extended practice in some rural areas was suggested. These are often promoted in opinion pieces. Is this the best way to ascertain the pharmacist roles and workforce shortages, particularly those in rural areas? Practitioner views will be sought as part of these investigations in this thesis, and will be discussed in subsequent chapters.

2.6.3 Factors affecting the pharmacy health workforce of the future

Part-time workers, the female workforce, employed pharmacists and generational

differences will affect the future pharmacy workforce.

Using the latest available data, women make up an increasing proportion of pharmacists in the Australian workforce (61.7% generally registered pharmacists in 2017, compared to 56.5% in 2012) [131, 146]. As in England, women tend to be employed rather than own or manage a pharmacy business [2, 147], thus impacting on staff availability.

In 2003, in Australia~~,~~ 47% of female pharmacists worked part-time, compared to only 21% of male pharmacists (part-time was defined as less than 35 hours per week) [148]. Ten years on, in 2012, 32.8% of pharmacists worked part-time. From the report it appears that 69.6% of these pharmacists were women (2,100 men; 4,800 women) [132]. Also, no later data has been found to confirm this is still the case, but the female part-time labour force is a substantial section of the overall pharmacy workforce [2]. There was no data as to the actual hours worked, which could have an impact on any statistical analyses.

Generational differences will also affect the workforce of the future. The Generation X workers (born: 1965–1980) and Generation Y (born: 1981–2000) [149] are the current and upcoming workforce. These will be the pharmacists who will seek meaningful careers, with good mentors and supervisors. They will tend to stay in a job for two to four years. Career is important and, provided it comes with rewards, they will stay in the job, but not have one job for life.

In contrast, the current generation of soon-to-retire workers, the Baby Boomers (born: 1946–1964) have an independent philosophy of doing the work themselves, and consider those younger do not have a good work ethic. Baby Boomers are workaholics, Generation X want a balanced approach while Generation Y, the future, are ambitious, and show tenacity and enterprise [149]. They will balance work, life and community involvement, thus providing a generation of workers who might be prepared to practise outside the current guidelines, and expand the role of the pharmacist. However, some research indicates the generational differences may not be as strong as previously suggested [150].

Generational differences may affect the future rural pharmacy workforce, but expectations of long-term employment, and commitment to a single location, cannot now be relied upon, by both employer, and employee pharmacists. Part-time practice

for all might also be preferred, and this will affect availability, recruitment and retention of pharmacists in rural areas.

Now and into the future, in Australia, if a community pharmacy is not viable or the travel time too great, there is a lack of employment pathways for community pharmacists. Existing models in hospital and medication reviews are funded, but potential models in community health centres or doctor's surgeries, do not attract any ongoing government funding and so are at the discretion of the business themselves. Consequently, employment opportunities are limited for a rural pharmacy practitioner.

2.7 Summary

Competent ongoing rural community pharmacy practice is a cornerstone of the rural health landscape. The community pharmacy is a vital link in the health care requirements for many in rural and remote areas in Australia. Over time, the profession has been supported by specific funding allocations from the CPAs, which acknowledges the different aspects of rural community practice. However, this funding has decreased over time.

There are a variety of organisations supporting pharmacy in Australia, and providing codes of ethics, guidelines and position statements for the profession. Supporting and maintaining a competent rural community pharmacy workforce is essential for this country. The current numbers of part-time and female pharmacists do affect the workforce, and it would be expected, that this in turn, could affect the rural workforce, where there are shortages, especially if permanent and locum staff are not readily available. Recruitment and retention of pharmacists in rural areas, is one area that has been explored, but continued research is required, given generational changes and work preferences in pharmacists, and the current change in ownership and pharmacy models especially if the community pharmacy is not viable.

Patient satisfaction is key to keeping a community pharmacy viable. Various authors have researched patient satisfaction and proposed complex models to explain the facets of this process. Some surveys have been simplistic in approach, asking the customer 'if they were satisfied' without the ability to define the service in question. Fewer studies have investigated whether the patient thought the pharmacist was capable of providing

a particular service, and if indeed this service would then be used.

The CPAs both support and limit the role of all pharmacy practice in Australia. In addition, the contribution of the rural pharmacy profession is still hampered by a lack of data and research. The focus remains on the pharmacist in the pharmacy itself, whether this be in urban or rural locations. Reports and papers [55, 151] suggest a wider role for pharmacists in rural areas, one supported by professional organisations such as PSA [63].

Pharmacists could be more than a just a provider of primary health services, medicines and medication information in the pharmacy. The next chapter will focus on a systematic literature review, examining examples found which have compared rural and urban community pharmacy practice in the Australian and international literature.

Chapter 3: Systematic literature review of comparisons in rural and urban community pharmacy practice

This chapter will focus on a review of community pharmacy practice, and investigate examples from the literature, where rural and urban community pharmacy activities have been compared and contrasted. The review will provide some background and evidence for the further thesis investigations in the following chapters. Using the community pharmacy literature, a systematic review was conducted.

3.1 Aims

The aims of Chapter 3 were to:

- find, using national and international examples, where current roles and features of rural and urban community pharmacy practice have been compared and contrasted
- analyse the results for commonalities and differences across countries in rural community pharmacy practice

3.2 Background

The literature contains many articles about individual rural community pharmacy practice, or rural and urban combined studies, where practice differences were not the focus of the publication [79, 80, 152-158]. Also, there are suggestions of practice differences between rural and urban locations in the popular Australian pharmacy literature [159-164].

The Pharmacy Guild of Australia promotes this practice to their members:

> Working in rural and remote pharmacies across Australia offers unique opportunities which pharmacy professionals in urban areas may find hard to imagine [165].

Health differences exist between urban and rural populations, with those in rural areas experiencing more health issues and having less access to services. For instance, rural people in Australia are more likely to have diabetes, arthritis, cardiovascular disease, asthma and mental health problems, than their urban counterparts [6]. In 2014, death rates due to chronic disease were higher for rural people and they lived, on average 4 years less [166].

Inherent in living in rural and remote areas, is travel to and relatively limited access to doctors and other health services [166, 167] including pharmacies. In Australia, for example, a 2014 survey conducted by the PGA found that capital city residents typically live within 1km of a pharmacy, while for those outside capital cities, the average driving distance to a pharmacy was 6.5km [168], which is an overall figure, and would vary enormously. The previous survey, in 1998 [168], found similar results, but also found those in remote areas lived 57.9km away from a community pharmacy. In other research for those in remote Australia, 0.8% of the population was found to be more than one hour's drive from a pharmacy [19] thus making access more difficult.

Given the clear differences, in health status and pharmacy access, along with anecdotal reports of rural and urban pharmacy practice differences, a systematic review, of the international literature together with an additional supplementary review were conducted, to find studies that have compared community practice in the two settings.

3.3 Methods

3.3.1 Data source and search strategy

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for systematic reviews were followed. A comprehensive literature search was undertaken from the inception of each database using PubMed, Embase, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and International Pharmaceutical Abstracts (IPA) up until 28 February 2018 using the terms 'pharm*' and 'rural'. This search required the terms to be in the title, abstract or as a keyword. A starting group of 3,830 publications was produced. The search approach taken is outlined in Table 3.1 below. A supplementary search was also completed using the same search terms to find studies up to 31 July 2018 and found an additional 228 papers. The approach for the supplementary review will be described later in the chapter.

3.3.2 Study selection

Duplicates and publications not in English were excluded. Publications were then screened by title and abstract, and those deemed irrelevant were excluded (e.g. related to pharmacognosy and traditional medicine, *in vitro* studies, history, opinion and news articles, editorials, conference abstracts without an accompanying paper, or about a

retail medicine outlet without a pharmacist). Also excluded were publications about rural hospital pharmacy, rural pharmacy only, or without an urban comparison, urban community pharmacy only, the dispensing processes, undergraduate and postgraduate education, interprofessional practice, pharmacy practice not in a community pharmacy (e.g. General Practice or a community health facility) or telepharmacy. The residual community pharmacy articles were reviewed and only those, which compared community pharmacy practice in differing geographical locations, were retained for a detailed review (15).

An example of an excluded study, where both rural and urban pharmacies were used to test various professional service models was undertaken by Benrimoj et al. (2003) [158]. In this study, 54 pharmacists were recruited, trained and recorded clinical interventions. Although conducted across different geographical regions, no analysis was evident comparing rural and urban practice settings.

Additional information was sourced from five Australian studies [40, 158, 169-171], for comparison using project reports, as the research publications did not contain the information required, but suggested it might be available in the final report document. All but one by Berbatis et al. (2003) [40], were rejected. The project by Peterson et al. [171], for which the original data was obtained directly from the author, had additional capacity for a comparison to be made, and will be analysed at in Chapter 7. Two additional papers were found after further reading, and the article by Muhleisen et al. [172] fitted the criteria and was included.

The final 17 publications from these searches were evaluated by two reviewers (PhD supervisors) to confirm eligible inclusion. Any disagreements were resolved after discussion. Included were those publications and reports in which the intervention/survey compared rural/regional and urban/metropolitan community pharmacy practice.

3.4 Results

The resultant papers, published between 1993 and 2017, compared rural and urban community pharmacy practice and fitted the final criteria set. A summary table of the publications is provided in Table 3.5 at the end of this chapter. The majority were from

North America and Australia, followed by, Europe and Africa. The studies used a variety of designs, including interview, survey and observation of both current and potential future community pharmacy practice, as well as some customer perceptions.

The results are depicted in the PRISMA flow chart is shown below in Table 3.1:

Table 3.1: Search strategy with exclusion criteria and final inclusion criteria up to 28 February 2018

Flow chart for study selection: Search of whole data bases up to 28 February 2018	
PubMed Mesh (pharmac* AND rural)	1,080
Embase (pharmacist*/exp OR pharmacist AND rural)	1,032
CINAHL (pharmac* AND rural)	713
IPA (pharmac* AND rural)	998
Others: 5 reports: PAATH/HAPPy/Diabetes/Cardiovascular Project/National Pharmacy Database; 2 articles referred to in texts: Mulheisen, Bell	7
Total number of publications	**3,830**
Initial exclusion criteria: **Duplicates, the article not in English; not relevant**	
Final exclusion criteria: **Rural hospital pharmacy, rural pharmacy only, those using rural pharmacy only without an urban comparison, urban community pharmacy only, dispensing processes, undergraduate and postgraduate education, interprofessional practice, pharmacy practice not in a community pharmacy such as a General Practice or community health facility or telepharmacy.**	
Final inclusion criteria: **The article was required to be about current or future community pharmacy services, an academic or a project report, written in English, with some comparison of rural and urban community pharmacy practice about information gained or an intervention within the community pharmacy.**	
Final number of relevant publications	**17**

Across the publications, there were specific and varying definitions of 'rural', ranging from the number of people within a geographic area, to more complex systems which included the quantity and nature of other health services, within a particular geographical area, or that were relatively close by. The rural definitions used in the various publications from different countries are explained in Table 3.2 below. Nevertheless, as each author defined 'rural' for the studies as per their own country guidelines, this therefore was accepted, and the article examined.

Table 3.2: Rural area classifications in different countries

Country	Rural classification system
Australia [24]	Australian pharmacy uses the PhARIA system, which includes geographic remoteness based on ARIA (Accessibility/Remoteness Index of Australia) and a professional isolation component using road distance to the closest five pharmacies. Locations are ranked between 1 and 6, with 1 being the most populous and containing 83% of pharmacies. Also, classified as PhARIA 1 are those in a 'buffer zone' of 30km around major centres of a population of more than 250,000 and a 10km radius for those populations of more than 18,000; and the '8 pharmacy rule' which means any centre in which there are more than 8 pharmacies.
Canada [173]	In Canada, rural areas are all those outside urban areas, including those on the fringe of census metropolitan areas and agglomerations. An urban area has a minimum of 1,000 people and a population density of at least 400 persons per square kilometre, based on the current census population count.
South Africa	For areas outside metropolitan there was no standard definition [174]. In 1996, there were urban, semi-urban and rural areas [175]. The province used for the Ward et al. study [176] was the Western Cape region, which has the most densely populated main areas (2001 data) and includes Cape Town.
United States of America (USA) [177]	The Census Bureau identifies two types of urban areas, urban areas of 50,000 people or more, and urban clusters of at least 2,500 to 50,000 people. Rural areas are all other areas not included in the urban area. Ranelli and Coward [178] used the classification of urban as 130,000 people. Despite the usual definition of rural with a population of less than 2,500, the authors chose to use 4,000 people. Haag and Stratton [179] used Metropolitan and Micropolitan Statistical Areas in Minnesota based on the county population [180]. Other publications: No definition so the approved standard was assumed.
United Kingdom (UK)	The Rural Urban Classification (introduced in 2004) defines rural areas as those outside settlements with more than 10,000 people [181]. There are many different classifications within the rural areas such as small towns, villages and dispersed population [182]. In Scotland [183], in 2003-4, rural areas were specifically population defined as 5: Accessible Rural (less than 3,000 people and within a 30-minute drive to a settlement of 10,000 people or more; and 6: Remote Rural, with settlements of less than 3,000 people but more than a 30-minute drive to a settlement of 10,000 or more. Accessible Small Towns (Category 3) and Remote Small Towns (Category 4) had populations of between 3,000 and 10,000 and similar drivetime categories to the more rural settlements.
New Zealand [184]	Urban minimum population 30,000. Rural areas population 300–999 Rural areas either have high, moderate or low urban influence, or are highly rural/remote areas (2001) The supplementary literature review contains a paper from New Zealand.

Of the final 17 publications (Table 3.5), three articles used patients only as the

investigated cohort, while 14 used pharmacists and pharmacy assistants, and one used both, as discussed below in the results. Some only used a small number of pharmacies, pharmacists, pharmacy assistants and/or customers. The studies were diverse and were difficult to compare or use to make generalisations. Sample selection varied (e.g. purposive, random), as did the data collection methodology (e.g. written or telephone surveys, focus groups, telephone or face-to-face interviews).

Of the 17 relating to pharmacist services, six were from the USA [178, 179, 185-188], five were from Australia [40, 172, 189-191], three from Canada [192-194] two from the UK (England and Scotland) [195, 196] and one from South Africa [176]. There were three studies in which customers were face-to-face or phone interviewed, one each from the USA [178], Canada [193] and the UK [196].

Topics ranged from the provision of pharmaceutical care [185, 186], pharmacist prescribing [194], public health services [188], or enhanced pharmacy services [40], current and proposed pharmacy services comparison [179, 196], services for opioid substitution [172, 189], provision of medication and support for those with Sexually Transmitted Diseases (STDs) [176], Human Immunodeficiency Virus (HIV) and Hepatitis B and C [195] or requiring contraception advice [192], ophthalmic chloramphenicol [191], asthma services [190], and providing support for those living with cancer [187]. Customers were surveyed as to their opinions on pharmacy practice, and use of the pharmacy services, in both rural and urban areas [178, 193, 196]. The outcomes of the 17 publications will be discussed in more detail.

A series of small focus groups [193] undertaken by pharmacy students in Canada, found price consideration was a factor for those visiting an urban pharmacy, and rural customers were more likely to ask the pharmacist for personal advice (e.g. for contraception.) Conducted in 1993, this study was very small with only four focus groups and results were classed as topic–specific and inconsistent by the author.

In 1996, a study in Florida (USA) surveyed or interviewed customers on the provision of pharmaceutical care and cognitive services [178]. It found customers were significantly more likely to speak to the rural pharmacist about health or non-related health topics. It was reported that, compared with urban pharmacists, rural pharmacists talked longer,

more often, and frequently initiated the conversation. This study used a population of 4,000 people to define a rural cluster, instead of the USA–accepted 2,500 people.

Customer interactions were analysed by Christensen and Hansen (1999) [186] as part of a larger project, in which payment was given for clinical services, in Washington (USA). Medical centre and rural pharmacies had higher intervention documentation rates. These same groups also had a good rapport with local patients and physicians.

Sisson and Israel (1996) [185] used a survey to identify levels of pharmaceutical care given by a group of randomly selected Virginia (USA) community pharmacists. The authors noted that selection for this study was challenging as there is no overall pharmacist database, and more women replied to the survey, suggesting a cohort, which was not indicative of the state pharmacist population. They found 57.7% of rural pharmacists were more likely to deliver a higher level of pharmaceutical care. This care occurred more in independently owned pharmacies (71.4%) and by those who worked less hours per week. For this study, rural areas were defined as having a population base of less than 2,500 people.

In England (UK), Rogers et al. (1998) [196] interviewed pharmacists and pharmacy assistants regarding their roles. More clinical advice was likely in areas with fewer doctors, and this was found to be unrelated to location, but those in rural areas provided more general health and over-the-counter medication advice. With no statistical analysis, this small study used the geographical term 'place' (a location that means different things to different people with various levels of attachment, belonging, and connection). In England, a rural area is one outside a population base of 10,000.

Berbatis et al. (2003) [40] in their study of 1,131 Australian pharmacies, found no statistical difference in the provision of many professional services, including for hypertension and diabetes, but more rural and remote pharmacies offered extra services for Aboriginal people and in herbal medicines. For data about other professional pharmacy services, PhARIA 1 pharmacies (urban) and PhARIA 2–3 (rural) were grouped together thus preventing any conclusions in practice differences. The overall study was extensive, but this professional service area was chosen for analysis. There was a lack of multivariate analyses to isolate the independent effect of rural and urban locations.

In Georgia (USA), Spruill and Wade (2004) [187] surveyed pharmacists and found rural pharmacists were more interested in supporting patients living with some cancers. No other comparison was possible. In Scotland, in the largely rural Grampian area, there were no geographic differences in attitudes to the provision of information, products and support for customers about HIV, Hepatitis B and C [195].

Using a postal survey, Kritikos et al. (2005) [190] found that Australian regional pharmacists saw their role as wider, and included providing more counselling about asthma, than did the urban pharmacists. There was no difference in opinion regarding commercial gains for this service.

In 2010, Haag and Stratton [179] found that rural Minnesotan pharmacists delivered more professional service using data from 2004. Minnesota (USA) is 53% rural. Although both urban and rural pharmacists spent approximately 70% of their time dispensing, similar that found by in Australia [40, 197], and later in New Zealand [198] (see supplementary review). Haag and Stratton found that rural pharmacies offered significantly more drug information (rural, 55.7%: urban, 45.6%), medical equipment services (rural, 43.4%: urban, 32.6%), dyslipidaemia management (rural, 7.8%: urban, 3.8%), hypertension management (rural, 14.6%: urban, 7.3%), and medication therapeutic management (rural, 29.4%: urban, 18.7%) (Figure 3.1). Overall, rural pharmacies provided significantly more medication therapeutic management and point-of-care testing. Geographic isolation and the suggestion rural pharmacists have more first line contact for care, were the reasons suggested for the higher level in services.

Figure 3.1: Comparison of Minnesota patient care services in rural and urban community pharmacy 2015

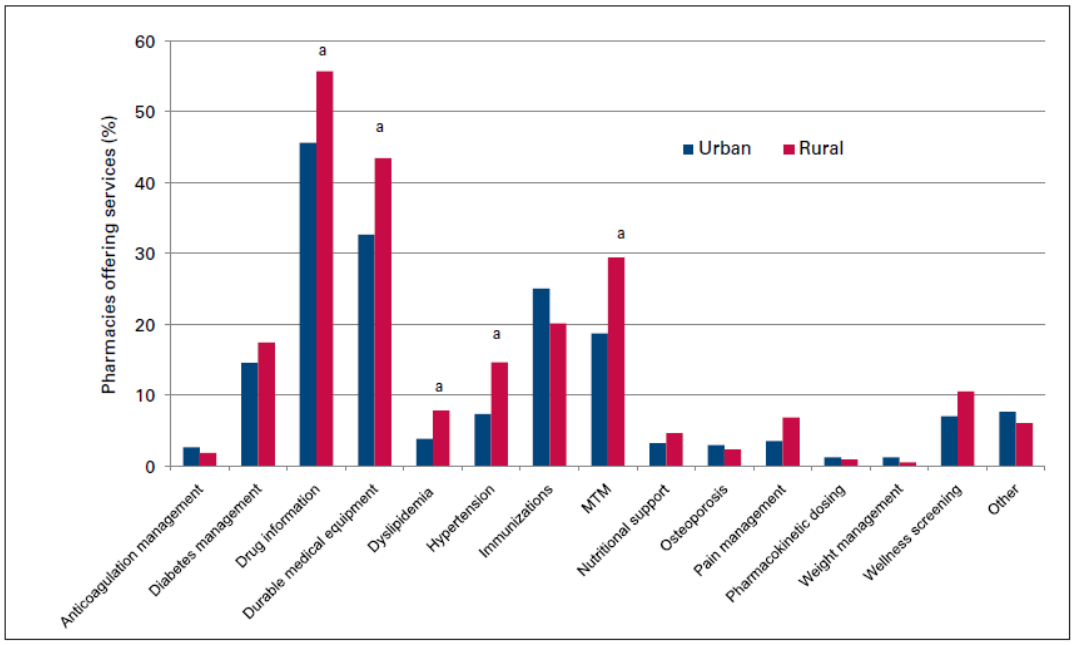


Figure 4. Comparison of patient care services offered by Minnesota rural and urban community pharmacies[a]
Abbreviation used: MTM, medication therapy management.
[a]$P < 0.05$ (Fisher's exact test).

Patient care in rural Minnesota community pharmacies, Haag and Stratton, 2010 [179]. Superscript references in this figure relate to the original article.

In Iowa and North Dakota (USA), Scott et al. (2016) [188] looked at public health services provided by pharmacies. Of the total cohort of 602 pharmacists, 297 were identified as rural pharmacists. Rural pharmacists reported a higher frequency of service delivery in the areas of medication therapy management (MTM), immunisation services, tobacco counselling, and medication take-back programs ($p<0.05$). Independently owned rural pharmacies provided greater levels of pharmacy services, partnerships in the community and conducted community needs assessments ($p<0.05$) (Table 3.2).

Table 3.3: Comparison of urban and rural pharmacist public health services in Iowa and North Dakota USA 2015

Table 2. Frequency of delivery of pharmacy services (number of times performed in past 30 days (mean))					
	Rural n=297	Urban n=305	Total n=602	CI of the mean difference	
Disease state management	1.87	1.56	1.71	-0.5639	-0.0601
Medication Therapy Management (MTM)	1.82	1.44	1.63	-0.654	-0.1197
Transition of care from inpatient to outpatient	1.8	1.43	1.61	-0.6502	-0.1054
Prescription Medication Take Back Program (safe medication disposal)	1.71	1.21	1.46	-0.7776	-0.2342
Pain management counseling	1.69	1.49	1.59	-0.4892	0.075
Immunizations	1.36	0.94	1.15	-0.6073	-0.2336
Tobacco cessation counseling	1.23	0.9	1.06	-0.6066	-0.0432
Hypertension screening	1.06	0.81	0.94	-0.5023	0.00092
Mental health counseling	0.98	0.89	0.93	-0.3443	0.1607
Weight control counseling	0.69	0.54	0.62	-0.376	0.0781
Lab test/diagnostic ordering	0.65	0.94	0.8	0.0957	0.4941
Diabetes screening	0.55	0.55	0.55	-0.2034	0.1909
Substance abuse counseling	0.54	0.34	0.44	-0.3916	-0.008
Prescribing	0.46	0.56	0.51	-0.0806	0.2807
Dyslipidemia screening	0.38	0.42	0.4	-0.1312	0.2214
Poison prevention education	0.36	0.3	0.33	-0.227	0.0999
HIV screening	0.04	0	0.02	-0.0848	0.0102
Hepatitis C screening	0.04	0.02	0.03	-0.0815	0.0396

Assessment of pharmacist's delivery of public health services in rural and urban areas in Iowa and North Dakota, Scott et al., 2016 [188]

However, rural pharmacists did report that lack of training was a barrier for professional services such as public health service provision. They were also less likely to provide laboratory and diagnostic testing; the reason suggested was due to low volume and equipment cost.

Pharmacists in Alberta Canada, with prescribing rights, were surveyed about their current practice by Guirguis et al. (2017) [194]. One-quarter practiced in a rural setting. Overall, three-quarters practiced in community settings, either in a community chain or in independently owned pharmacy. Rural pharmacists prescribed more than urban pharmacists ($p<0.05$), but had similar prescribing patterns. Most prescribed for continuity of therapy, dose alteration, repeat prescriptions and substitution medication, but the authors stated that this could be explained by the practice setting; there are more independently owned pharmacies in rural areas. A multivariate analysis was not performed. Prescription renewal was the most common prescribing right practiced by all community pharmacists. Again, lack of access to training was the main barriers reported by rural pharmacists.

Rural pharmacists (90%) were prepared to take on more clients in South Australia and provide opioid substitution, compared to urban pharmacists (48%) [189]. Rural pharmacies had a lower number of clients per pharmacy (4, rural: 6, urban) but the

study suggested they had a higher degree of cooperation and communication with the GP prescriber. Muhleisen et al. (1998) [172] found less disruptions, theft or payment-related problems in rural pharmacy with methadone clients, presumably because clients had fewer local treatment options.

Alkhatib et al. (2015) [191] found provision of over-the-counter ocular chloramphenicol in Western Australia was less frequent in rural pharmacies (1–2 times per week: 3–4 times per week in urban pharmacies), a finding suggested as unexpected, by the authors despite extensive statistical analysis.

In South Africa, Ward et al. (2003) [176] found female pharmacists were less likely to treat STDs compared to male pharmacists in this proposed practice model. There was no difference in willingness to diagnose, give sexual health advice or prescribe medicine if needed between rural and urban pharmacists. Prescribing for this service was not legal in South Africa at the time of the study. In Canada, Norman et al. [192] found that there was no difference between pharmacists in rural and urban areas willing to prescribe oral contraceptives, but shorter opening hours in rural areas, was considered a barrier.

3.5 Supplementary search results

The systematic literature review was re-run to capture any further articles from 1 March 2018 to 31 July 2018. The search terms were the same except for those used for the IPA. Using the previous search terms did not provide any additional papers, however using 'pharmacist AND rural' provided two papers as shown in Table3.4 below. The same definitions of 'rural' were assumed, and an explanation for the New Zealand classification has been added to Table 3.3. The same inclusion criteria were used, with each evaluated and checked by two reviewers (PhD supervisors).

Table 3.4: Search strategy with exclusion criteria and final inclusion criteria 1 March 2018–31 July 2018

Flow chart for study selection: Search of whole data bases to 1 March 2018–31 July 2018	
PubMed Mesh (pharmac* AND rural)	112
Embase (pharmacist*/exp OR pharmacist AND rural)	72
CINAHL (pharmac* AND rural)	42
IPA (pharmacist AND rural)	2
Total number of publications	**228**
Others referred to in texts:	0
Initial exclusion criteria: **Duplicates, the article not in English; not relevant**	
Final exclusion criteria: **Rural hospital pharmacy, rural pharmacy only, those using rural pharmacy only without an urban comparison, urban community pharmacy only, dispensing processes, undergraduate and postgraduate education, interprofessional practice, pharmacy practice not in a community pharmacy such as a General Practice or community health facility or telepharmacy.**	
Final inclusion criteria: **The article was required to be about current or future community pharmacy services, an academic or a project report, written in English, with some comparison of rural and urban community pharmacy practice about information gained or an intervention within the community pharmacy.**	
Final number of relevant publications	**3**

Three papers were found that met the criteria for this supplementary systematic literature review. All were surveys, one each from the USA on proposed naloxone provision service [198], Canada on immunisation and the role of the pharmacist [199], and New Zealand which reviewed patient-centred care in community pharmacies [200].

Stewart et al. (2018) [198] surveyed 211 pharmacists, to test their knowledge, attitude and roles in naloxone provision before it was legal to do so in Michigan (USA). Although with a low response rate (8%), it appeared, rural practitioners were more likely to take responsibility for patients after dispensing the dose (p=0.01), compared to urban pharmacists. In this survey, 36% of the respondents were from a rural area, and 48% practiced in a community setting. However, it is not known exactly how many were rural community pharmacists. Other practice options listed were outpatient clinic, speciality-managed care pharmacy, health system, academia or 'other'.

In Ontario, Canada, Alsabbagh et al. (2018) [199], studied the pharmacist immuniser

cohort and found urban pharmacists were twice as likely to be certified to provide influenza immunisation (p=0.04). The authors suggested that more urban residents were vaccinated than rural consumers, and this may account for the findings. Another influencing factor on the results was that the rural pharmacies were more likely to be independently owned.

In New Zealand, Smith et al. (2018) [200] investigated the patient-centred service provided by community pharmacies using a survey. With a response rate of 72% (690/958), there were no differences in services between rural and urban pharmacies. It was found that pharmacists spent 74% of their time on core services, 18.3% on Long Term Care (LTC) patients, and 7.7% on other services. There was no difference in barriers to services, but rural pharmacies reported a lack of uptake for some specific services by customers (p=0.03). While rurality was not a factor, those from a banner group provided significantly more services, than pharmacies which were not. It was suggested that more support might be needed, to assist rural pharmacies in service provision.

3.6 Discussion

In rural areas, healthcare and consequently community pharmacy practice has a unique set of challenges related to geographic location and availability of staff and services as discussed in previous chapters of this thesis. Inherent also in rural and remote locations for community pharmacy, are the challenges of stock availability, staff availability and options for referral of patients to medical and allied health services. Within the pharmacy, other challenges include the ability of staff to carry out not only dispensing and its associated activities, but also professional services such as pharmaceutical care, medication reviews, screening, support, primary health care and treatment services.

This systematic review was conducted using data up to 28 February 2018, with a supplementary review conducted up to 31 July 2018. The aim was to find papers in which the activities of rural and urban community pharmacy practice, other than dispensing and its associated counselling, were compared. No starting date was used, and the oldest relevant study found was from 1993. There were substantial differences in the study types and size, which fitted the final inclusion criteria, that is, studies that in some way compared rural and urban community pharmacy practice. For most papers,

comparison was not the core purpose of the study. Numerous studies were excluded from the original search strategy because they were only conducted in a rural location, or the study data was combined for analysis, and the reporting format did not allow for comparisons.

These studies were diverse in their subjects, age, numbers of participants and geographic locations. Some looked at proposed services, others current services. For some services, there was no statistical significance, while others did not conduct additional statistical tests such as logistical regression on data.

It appeared that rural customers were more willing to talk about general health matters and ask advice from the pharmacist. The rural pharmacist initiated conversations and talked longer than in urban pharmacies [178, 186, 190, 193, 196], however two studies found no differences [192, 195] in the specific areas of contraception and assistance with HIV, Hepatitis B and C treatment options. A study regarding opioid substitution clients, found that those in rural areas significantly caused less disruptions (verbal, payment problems) in the pharmacy [172] but also these clients had less location treatment options. Rural pharmacists also had a better relationship with the pharmacotherapy prescribers. Pharmacists practicing in rural areas were also more likely to follow-up on clients administered naloxone, should the service be introduced [198]. There was only one study in which the gender of the pharmacist in a rural area affected a willingness to examine, diagnose and treat STDs [176]. Rural pharmacists in one Canadian province were less likely to be certified influenza immunisers than their urban counterparts [199].

Despite the same amount of time spent on dispensing, the levels of professional service provision were higher in rural areas [179, 188], but not in all cases [40, 200]. Many reasons were given in the papers as to why this could happen, including patient access to a pharmacy, socio-economic status of customers, or how busy the pharmacy was. It also acknowledged the survey by Haag and Stratton [179] did not obtain levels of service provision, just if it was provided or not, thus challenging the validity of the results. Scott et al. [188] also explained away any differences instead suggesting as there were more independent pharmacies in rural areas, and this attributed to the differences in practice. He also suggested that the reasons rural pharmacists deliver

more services was because they have more time, or there is a greater community need Guirguis et al. (2017) [194] found more prescribing in rural practice but also suggested the difference was due more independent rural pharmacies. Berbatis et al. (2003) [40] suggested only certain services were higher in remote areas of practice, but no data was available for rural/regional areas as this was combined for analysis in the report. Alsabbagh et al. (2018) [199] suggested that the urban population was more likely to have an influenza vaccine compared to the rural population, refuting the possible value of more certified immunisers in rural areas where the immunisation rate is usually less. Despite apparent increased levels of service provision, it was unfortunate some authors chose to explain the differences away.

There was only one study [196] which compared rural and urban practice using the geographical concept of 'place', while the others focused on the activities conducted by pharmacists and pharmacy assistants, in the community pharmacy setting.

In many discarded studies, rural pharmacies were usually included in larger projects in order to get a spread of participants, similar to the appropriate geographic spread of community pharmacy locations. However, comparison data was not evident in the papers or associated reports. Often there were limited numbers of participants and/or pharmacies in the research activity, providing only small numbers of participants in individual geographic areas, with no statistical analysis. Despite including rural and urban pharmacies, data was often pooled for overall analysis.

Overall, there is very little data to differentiate the two areas of practice, with many publications found to be more than 10 years old. Each paper investigated different areas of pharmacy practice, except the earlier papers, which investigated the overarching concept of pharmaceutical care. It appeared the rural pharmacies were more interested and able to talk to their customers, but it could be argued that usually these pharmacies are smaller and quieter, thus allowing this interaction. It was also found there was more medication management (review of medication or prescribing), point-of-care service provision and public health programs in rural areas. Nevertheless, it appears the extent and nature of the differences between rural and urban community pharmacy practice has not been thoroughly investigated or defined.

3.7 Conclusion

Only four studies set out to show differences between rural and urban community pharmacy practice. One [196], used the concept of 'place' and the second pharmacy used customer interviews [178]. Both were conducted in the 1990s. The third study identified increased service provision in rural areas of one state in the USA [179]. The final study [188], found more public health service provision in rural pharmacies in two states of the USA.

The systematic reviews conducted found current comparative data was essentially a by-product of the results of the intervention or investigation, into various forms of community pharmacy practice. Many other studies selected a range of geographic locations in which to investigate interventions, or assess pharmacist or patient knowledge and opinion, but pooled data in order to analyse the results.

There was some evidence that rural pharmacists were seemingly more willing take on new roles, deliver a higher level of pharmaceutical care and public health services, take on more clients for opioid substitution, initiate conversations about health or non-related health topics and talk longer to their customers. However, this conclusion is based on a small number of studies, often with a limited number of respondents, from a wide variety of contexts, and simplistic data analysis, without adequate control for potential confounding variables. Further high-quality research is required to ascertain and characterise any differences in community pharmacy practice between rural and urban settings.

A poster and abstract prepared for the Pharmaceutical Society of Australia Conference (2018) can be found in Appendix 1, for the Systematic Literature Review up to 28 February 2018. The Australian Journal of Pharmacy daily news feed picked up the poster [201] and promoted the results. The following chapter will build on this difference, or lack of, using a series of analyses of interviews with Australian key opinion leaders to ratify or challenge these findings.

Table 3.5: Systematic review references summary up to 28 February 2018

Author/ year/ country/ region	Study aim	Number of pharmacy sites/customers	Type of intervention /measurement	Findings	Comments
Stratton et al. 1993 [193] **Canada, British Columbia (BC)**	To explore the attitudes of rural and urban consumers to community pharmacy.	Customers 2 rural groups, 5 customers each 2 urban group 5 and 7 customers	Focus group interviews by pharmacy students	Customers were more comfortable speaking about health concerns in rural pharmacies on a topic such as contraception. Rural participants considered the pharmacists as health professionals but not part of the health care team, only there to fill the prescription provided.	Findings were considered topic specific and inconsistent. Small numbers hamper the conclusions, but the authors acknowledge this.
Ranelli and Coward 1996 [178] **USA, Florida**	To compare the opinions of adults from two communities about their pharmacy choice and pharmacist communication experiences.	Urban: 200 patients Rural: 200 patients Total: 400 patients Used rural town of up to 4,000 people for survey, metropolitan city was 130,000 people.	Exploratory randomly selected written survey; phone interviews	No statistical differences in health between the rural and urban group. Elders live in more sparsely populated areas, more likely to purchase from an independent pharmacy, had lower incomes, less education but would speak to the pharmacist more, although not necessarily about medicines and health related topics. There were no residential differences in how often the respondents spoke about medicines or other health-related matters with a pharmacist.	Geographic spread of pharmacies seen as source of critical health-related information. In addition, communication with the pharmacist was positive but a large number never talk to their pharmacist from either location.

Author/ year/ country/ region	Study aim	Number of pharmacy sites/customers	Type of intervention /measurement	Findings	Comments
Sisson and Israel 1996 [185] **USA, Virginia**	To compare the characteristics and components of pharmacists' perception of pharmaceutical care.	236 rural pharmacists 168 urban; 256 suburban pharmacists	Written survey of Virginian Pharmacists Association. Only community pharmacists' information was analysed. Response rate 39%	Rural pharmacists (57.7%) and independently owned pharmacies (71.4%) more likely to conduct a higher level of pharmaceutical care, and appeared to have good rapport with their patients and local doctors.	Authors expressed concern for bias, as there was no overall pharmacist database for Virginia at the time. Respondent group had more females than the general pharmacy population.
Rogers et al. 1998 [196] **UK, England**	To describe the nature and factors affecting advice given in community pharmacies.	10 diverse pharmacies Rural population: less than 10,000 people	Random selection customers with follow-up phone interview. Pharmacists and pharmacy assistants interviewed about their roles.	Pharmacists more likely to give advice if in 'poorly doctored' areas both urban and rural. Highest levels of over-the-counter medication (OTC) advice given in rural areas. Little general health and illness advice given by all pharmacies.	Small qualitative study. Three diverse groups of pharmacies analysed, and it suggested that the relationships between staff and customers were better in rural pharmacies compared to inner city pharmacies.
Muhleisen et al. 1998 [172] **Australia, Victoria**	To describe the attitudes and experiences of pharmacists in the delivery of methadone services.	All authorised community pharmacies who had methadone clients	Written survey with 1–2 phone calls as follow-up Response rate 77%	Urban pharmacies were significantly more likely to experience disruptions such as verbal abuse, theft or payment related problems. Suggestion that rural clients have fewer treatment options.	This small study was conducted in 1995 but had a good response rate.

Author/ year/ country/ region	Study aim	Number of pharmacy sites/customers	Type of intervention /measurement	Findings	Comments
Christensen and Hansen 1999 [186] **USA, Washing-ton State**	To determine which barriers and incentives such as the influence of pharmacy setting, and demographics affect cognitive service provision in pharmacies.	200 community pharmacies	Self-recorded written survey and record of cognitive services for Medicaid pharmacies. Randomised groups: payment and non-payment groups of pharmacies for cognitive services. Response rate 73% study, 75% controls.	Investigated location influencing pharmaceutical care given. Documentation was higher in rural areas.	No data about pharmacy location and environment influencing advice given. Rural pharmacies and those in medical centres had higher documentation rates of interventions but this could be a factor of the time pressure, script volumes, Medicaid patients or if the pharmacist was the owner or manager.
Watson et al. 2003 [195] **UK, Scotland**	To assess the activity, knowledge and attitudes of pharmacists for HIV and Hepatitis B/C prevention.	22 rural pharmacies 15 urban; 29 suburban; 29 town	Written cross-sectional survey to all pharmacies in the largely rural Grampian area. Response rate 77%.	No differences between rural and urban pharmacies, negative responses such as lack of demand and knowledge in potential service provision.	Area surveyed is mainly rural but time, lack of training and lack of privacy in pharmacy were barriers for rural pharmacies.
Ward et al. 2003 [176] **South Africa, Western Cape**	To assess the role and potential future of community pharmacists in the treatment of STDs.	30 rural pharmacies. 16 (53.3%) had male head pharmacist	Random selection of cross-section pharmacists in Western cape	No differences in opinions between rural and urban pharmacists after multivariate analyses. Women pharmacists less likely to treat STDs.	No legislation currently to allow this practice.

Author/ year/ country/ region	Study aim	Number of pharmacy sites/customers	Type of intervention /measurement	Findings	Comments
		55 urban pharmacies. 47 (85.5%) had male head pharmacist	region Phone survey followed by face-to-face interview. Response rate 95%		
Berbatis et al. 2003 [40] **Australia**	To construct a database of Australian pharmacy service characteristics including comparisons by rurality (PhARIA).	1,131 pharmacies (482 PhARIA 1, 649 PhARIA2-6)	Written survey Response rate 81%	Survey the extent of services provided by community pharmacies. Remote pharmacies (PhARIA 4–6) offered more Aboriginal health services and herbal medicines.	Lack of some statistical analysis did not allow for detailed comparison between rural and urban practice PhARIA 1–3 pharmacies were grouped for analysis despite pharmacies in PhARIA 2 and 3 classed as rural.
Spruill and Wade 2004 [187] **USA, Georgia**	To survey pharmacists' knowledge of cancer awareness and prevention services.	Rural pharmacists: 121 male, 43 female (26.2%) Urban pharmacists: 103 male, 69 female (40.1%) Total respondents 489	Written survey using University of Georgia data base (largest professional development provider) Response rate 33%	Preliminary survey indicated pharmacists were interested in learning more on how to support those with cancer. Rural pharmacists were marginally more interested in receiving knowledge and education for skin and breast cancer only.	All settings analysed together so there is no significant real differentiation of rural and urban community pharmacy settings.
Lawrinson et al. 2008 [189] **Australia, South Australia**	To examine practices, experiences and attitudes in a sample of South Australian pharmacists involved with Opioid Substitution Therapy.	9 pharmacies (18%) rural; (population greater than 5,000) 10 pharmacies (20%) rural;	Telephone recruitment, written survey, random sample, stratified by geographic location.	Rural pharmacies were more willing to increase their number of opioid replacement clients but had less initially (current median number of clients 4 rural: 7 metropolitan).	Previous survey by Muhleisen et al. [172] showed problems more likely in urban areas.

Author/ year/ country/ region	Study aim	Number of pharmacy sites/customers	Type of intervention /measurement	Findings	Comments
		population less than 5,000) 31 pharmacies (62%) metropolitan, centre, inner and outer areas	Response rate 100% (Target 50)	Urban pharmacists more likely to want more cooperation between prescriber and pharmacist. No differences in problems with clients if different geographic locations.	
Haag and Stratton 2010 [179] **USA, Minnesota**	To compare medication management, point of care testing and disease management resources between rural and urban Minnesota community pharmacies.	564 community pharmacies 220 rural; 344 urban	Written survey	Rural pharmacies provided significantly more medication therapeutic management and point-of-care testing.	Survey conducted in 2006. Suggested reasons for higher rural involvement in services—pharmacists more likely first contact, lower patient income, higher poverty and the community pharmacy being more accessible. Findings are in Minnesota only, which is 53% rural, compared to the national average of 21%.
Kritikos et al. 2010 [190] **Australia, New South Wales**	To explore pharmacists' roles and perceptions in the provision of asthma care.	52 pharmacies (69%) urban pharmacists 23 pharmacies (31%) rural pharmacists	Convenience postal survey Response rate 89%	Regional pharmacists identified a wider role than urban pharmacists did. Regional pharmacists were more likely to see their role encompassing counselling about asthma control. No significant difference in perceived barriers or interprofessional contact between urban and regional pharmacists.	Only used postcodes to identify rurality. Regional is undefined in the article. Urban pharmacists worked longer hours than regional pharmacists did.

Author/ year/ country/ region	Study aim	Number of pharmacy sites/customers	Type of intervention /measurement	Findings	Comments
Alkhatib et al. 2015 [191] **Australia, Western Australia**	To evaluate factors influencing pharmacists' supply of ocular chloramphenicol.	25 pharmacies (21%) PhARIA 2–6 rural 94 pharmacies (79%) PhARIA 1 metropolitan Total 119 responders	Written survey, random sample, urban and rural Response rate 49.5%	More chloramphenicol eye products appropriately supplied by urban pharmacists than rural (3–4 times per week compared to 1–2 times per week).	It was expected more rural than urban pharmacies would provide chloramphenicol.
Norman et al. 2015 [192] **Canada, BC**	To study the willingness of pharmacists to prescribe hormonal contraception.	128 rural pharmacists; 15 urban pharmacists, 2 unknown Total 146/375 responders. 17 rural, 2 urban pharmacists interviewed	Mixed methods: randomised written/electronic survey with follow-up, and optional interviews Response rate 39.8%	No differences between rural and urban pharmacists on willingness to prescribe independently oral contraception hormone therapy.	Suggestion rural/small town pharmacies could stay open longer to allow this service.
Scott et al. 2016 [188] **USA, Iowa and North Dakota**	To assess the delivery of pharmacist public health services in rural and urban areas.	602 pharmacists: 297 rural, 305 urban pharmacists	Survey of practice	Rural pharmacists more likely to deliver medication therapy management, immunisation, tobacco counselling, and medication take-back programs. Independent rural pharmacist delivered more services, community partnerships, needs assessments.	Rural pharmacists reported lack of was a training barrier for public health service provision. Less likely to provide lab and diagnostic testing due to low volume and equipment cost. Reasons suggested rural pharmacists deliver more services were that they have more time or greater community need.

Author/ year/ country/ region	Study aim	Number of pharmacy sites/customers	Type of intervention /measurement	Findings	Comments
Guirguis et al. 2017 [194] **Canada, Alberta**	To characterise pharmacist prescribing in Alberta, Canada.	350 pharmacists, 94 in rural practice	Survey	Rural pharmacists prescribed more frequently, similar reasons to those in urban practice. Community pharmacists were more likely to renew prescriptions.	Single province in Canada, one with the largest range of prescribing rights.

Table 3.6: Supplementary systematic review references summary 1 March 2018–31 July 2018

Author/ year/ country/ region	Study aim	Number of pharmacy sites/customers	Type of intervention /measurement	Findings	Comments
Stewart et al. 2018 [198] **USA, Michigan**	To identify knowledge gaps and attitudes to naloxone provision.	211 pharmacists 36% rural, 59% urban.	Survey	Rural pharmacists more likely to provide follow-up care after provision of naloxone.	Low response rate (8%).
Smith et al. 2018 [200] **New Zealand**	To understand the profile and types of services provided by pharmacies in New Zealand.	528 pharmacists	Survey Response rate 72% of pharmacist cohort (690/958).	Assumed both provincial town and rural included as 'rural'. No differences in provision of services, but rural pharmacies more likely to report consumer uptake as a barrier for some services. Banner pharmacies provide more services than independent pharmacies.	More assistance may be required in rural areas. No evidence of the standard of services provided.
Alsabbagh et al. 2018 [199] **Canada, Ontario**	To describe pharmacist immunisers, their pharmacies and services.	708 community pharmacists, 603 certified immunisers 71.9% urban, 17.3% rural, 10.8% missing	Survey	Urban pharmacists twice as likely to be certified as an immuniser than rural pharmacists (p=0.04). If the pharmacy was with a banner group, this was just as significant.	Influenza vaccine provided free to pharmacies. Authors state that demand for vaccinations was higher in urban areas compared to rural areas.

Chapter 4: Analysis of pharmacy key opinion leader interviews, on rural pharmacy practice, the challenges, and the future of community pharmacy practice

There is a scarcity of literature in which the components of rural and urban community pharmacy practice have been compared. Very few studies, as shown in Chapter 3, have been conducted where the aims were to compare practice and activities [178, 179, 188, 196]. Some reported comparison data as a secondary outcome. Overall, the studies found were relatively small, considering the potential pharmacist and pharmacy cohorts—from 10 pharmacies [196] up to 708 participants conducted in only one province of Canada [199].

Key opinion leaders in any profession are more likely to be responsible, and have the vision and ability to shape the profession, now, and into the future. As a group, the combined views of opinion leaders in pharmacy have not been found, in any searching of the literature to date. Consequently, it would be valuable to gain an insight into the views of those who provide spoken, and written opinions on aspects of the pharmacy profession—in particular, their views relating to rural and urban community pharmacy practice differences. It was thought that these leaders would have a broad view of the profession and of the supposed barriers or enablers, even if they had not specifically practiced in rural areas.

Given the aim of this research was to identify any differences in rural and urban pharmacy practice and answer the research questions posed in Chapter 1, opinion leaders in Australia were asked for their views using their wide-ranging knowledge and experience in the profession, in the areas of apparent practice differences, barriers, opportunities, challenges, changes and the future. A follow-up set of interviews was also conducted to see if any change in opinion had occurred over time. This data would add to the knowledge gained from the systematic literature review (Chapter 3) and guide further studies into the initial research questions.

4.1 Aims of the study

The aims of the study in Chapter 4 were to:

- elicit the views of Australian key opinion leaders on rural community pharmacy practice (and differences from urban-based practice)
- compare and contrast these views between the initial interview series (2008–2010) and the follow-up interview series (2016)

4.2 Method

With ethics approval, from the Tasmanian Social Sciences Human Research Ethics Committee, opinion leaders were selected, approached, and interviewed using the process described below. The interview itself was transcribed and analysed, to allow for review and reflection on the transcriptions. These results will be discussed in the following section.

4.2.1 Selection of interviewees

A list of key opinion leaders was developed for the two-interview series using the following criteria—pharmacists who:

- had published opinions and editorials in the academic pharmacy literature
- were principal officeholders of professional pharmacy organisations
- were employed in a variety of professional pharmacy organisations
- were known opinion leaders and spokespeople in the rural community pharmacy domain

This list was objectively reviewed with independent scholars, to select the final 13 interviewees, who were deemed as representative of the various spheres of pharmacy practice and knowledge. Participants were approached by email, once ethical approval was received. Eleven subjects accepted the request.

Ten key opinion leaders accepted the follow-up interview request using the same method of approach, to investigate and compare practice or changes that had occurred over time, since the first interview series.

4.2.2 Method of conducting the key opinion leader interviews

Semi-structured interviews of key opinion leaders were undertaken using interviewees from professional and student organisations, academia, medicine information organisations and research, as well as current practitioners who were rural pharmacy

owners or staff pharmacists. Many had multiple roles, both current and in the past, within various organisations, and in many voluntary professional areas. Some, not all, had expertise in rural practice, but it was considered that the participants would have a familiarity with this area, as part of their numerous and varied ongoing roles within the profession itself.

The pharmacy profession key opinion leader codes, with examples of their expertise, at the time of each interview, are listed in the table below:

Table 4.1: Pharmacist key opinion leader interview list: Interview series one and follow-up series

Code	Role at time of initial interview	Role at time of follow-up interview	PhARIA work base
S1	Key pharmacy opinion leader and academic, drug regulatory body representative, pharmacist	Same role as listed for the initial interview	1
S2	Past Chair AACP, accredited pharmacist, PSA committee and national representative, community pharmacist and rural pharmacy owner	Clinical pharmacist, accredited pharmacist, rural pharmacy owner, educator, PSA national committee member on policy and the profession	1, 5
S3	Rural opinion leader, rural community pharmacy manager, PSA rural spokesperson	Rural opinion leader, rural community pharmacist locum, HMR, RMMR, QUM pharmacist, PHN pharmacist	1,
S4	PGA representative, pharmacist	ACP representative, pharmacist	1
S5	NPS Facilitator, accredited pharmacist	NPS MedicineWise Clinical Services Specialist (expanded role), accredited pharmacist, tutor School of Medicine for medical students	1
S6	Past Chair NAPSA, pharmacy student	Community pharmacy owner (PhARIA 1 but in a rural/regional location)	1
S7	Community pharmacist and rural pharmacy owner	Same role as listed for the initial interview	1
S8	SHPA rural spokesperson, rural academic, rural hospital pharmacist	Rural and pharmacy academic, rural hospital locum pharmacist, educator	1

Code	Role at time of initial interview	Role at time of follow-up interview	PhARIA work base
S9	Rural pharmacy group owner, pharmacist	Unavailable. *Not interviewed for follow-up series	1
S10	Head of School, School of Pharmacy (not Tasmania), pharmacist	Same role as listed for the initial interview	1
S11	Past pharmacy owner, business lecturer, PSA branch director, pharmacist	Same role as listed for the initial interview	1

Despite an initial request, there was no representation from the CPA funding body i.e. the Commonwealth Department of Health and Ageing (at the time), or the selected CEO of a pharmacy chain. After consultation with colleagues, some substitutions from similar fields of practice were made for the first round of suggested people, to ensure the same varied representation. For the second round of interviews pharmacist *S9* had retired and was not contactable.

Codes for each of the participants and the interview origin will be shown in the text as follows:

- *S1.1* is participant 1, using data from the first interview series
- *S1.2* is the same participant, using data from the follow-up series of interviews

The interview question design was developed with supervisors, to illicit information from the interviewees about their knowledge, skills and factors affecting the profession overall, as well as what they considered to be the practice differences and issues, specific to rural and remote community pharmacy in Australia. Each question was considered generic, and could be answered by all participants. At the start of the interview, the current role and background for each interviewee was requested, to provide a demographic base for this study. The first series of interviews was conducted in late 2008 to early 2010.

The following groups of topics were explored:

- influences, challenges, changes and the future in pharmacy
- pharmacist work model issues e.g. time spent in the dispensary, professional services,

health promotion and medication adherence

- opinions of any differences in rural practice (versus urban practice) were actively sought at each step from each participant

In the 2016 follow-up series, the questionnaire was again developed with supervisor input. Interviewees were again asked to describe their current role at the start of the interview. For this interview series, most questions focused on the influences, challenges, changes and the future of pharmacy. This enabled a comparison to be made to the first set of interviews. Opinions on rural pharmacy practice were included with each question asked.

The following topics were explored:

- influences, challenges, changes and the future in pharmacy
- opinions of any differences in rural practice (versus urban practice), were actively sought at each step from the participants

Interviewees were asked about changes over time, and given an example of their comments from the initial series when needed, as a prompt, if any differences in opinion between the two interviews emerged. If the opinions were essentially the same, it was acknowledged by the interviewer.

With informed consent, the key opinion leaders were interviewed, using a semi-structured interview process, with a single interviewer/PhD student (HH). The questions were open-ended and informal; in order to engage the participants, and encourage more detailed responses.

Each semi-structured interview took approximately one hour to complete, with some longer. Interviews for the first round were face-to-face (5/11) and the rest by telephone if the participant was interstate (6/11). Most interviews were via telephone (8/10) for the second round. Subjects were encouraged to talk, and often some reflection on previous questions occurred, particularly at the end of the interview, so the opinions and answers were not necessarily in question sequence.

Each participant was continually prompted to comment on possible differences or similarities in urban or metropolitan, versus rural or remote pharmacy practice.

4.2.3 Transcription methods

Most of the interviews in the first round were transcribed by the interviewer and the remainder by a commercial transcription service. All were commercially transcribed for the follow-up interviews. The same service was used for each round of interviews. Each interview was checked by the interviewer/PhD student (HH) for accuracy, together with tonal emphasis and pitch variations, which were then annotated onto the written record.

Participants were offered a copy of the transcript to confirm accuracy, but most were satisfied with notification of quotes or comments used in the final work. After the second round of interviews, participants were sent both transcripts for verification, with none being returned for corrections.

4.2.4 Analysis methods

The qualitative research approach, looking at the meaning and rationale behind the responses, can give information that may not be available in quantitative research methods [202]. This provides a new perspective to the attitudes and beliefs of the participants, and an in-depth understanding of their collective views. The discourse analysis approach was used in this investigation, in which identification and examination of the common thoughts and constant ideas of the participants, were grouped and regrouped. This method ensures consistency, and is used to confirm correct concepts and categories were identified, from the whole of the interview cohort. This method also diminishes the possible selection bias with incomplete data sets [187], and incomplete analyses [196], two of the traps in qualitative research analysis, that can occur when identification of themes, does not progress to a model, or to challenging or confirming existing understandings.

The transcribed interviews were analysed by constant comparison using a combination of the NVivo© qualitative data analysis Software (QSR International Pty Ltd) thematic analysis program, and by using paper-based copies to allow visual comparison with highlighting of various sections and segments.

As required by the qualitative analysis approach, continual reading, grouping and study of the transcripts, enabled the common themes to be identified and classified. The

classification sections were continually reviewed reflectively. Some additional regrouping of themes took place when all were classified, to finalise the resultant groupings.

Although this interview cohort was small, it was considered representative of key opinion leaders in Australia. It was expected there would be divergent and inconsistent views, but triangulation using further studies, would allow the emerging themes to be further explored and corroborated.

4.2.5 Ethics approval applications

The two interview schedules and ethics applications were submitted and approved, by the Tasmania Social Sciences Human Research Ethics Committee (H0010055 and H0015844) (Appendix 9). Copies of the approved interview schedules are in Appendix 2 and 3. The final ethics report approval confirmation email is in Appendix 9.

Information sheets were provided, and acceptances were given to each, and completed consent forms received from the participants, prior to being interviewed.

4.3 Results

In the first interview series, the interviewee pharmacy practice experience, ranged from one still being an undergraduate, to 40 years as a qualified pharmacist. In the follow-up series, practice ranged from five to over 45 years' experience. Many described the extensive and high-profile range of roles and positions they had held, during the course of their careers. Anonymity of this group was a concern during analysis, and all attempts were made to preserve this for the interviewees, during the interview, and subsequent data investigation. It was acknowledged by the interviewees, that because they were key opinion leaders in Australia, their identity might be deduced by a reader. All interviewees accepted this may occur, and proceeded with the interview.

For the initial analysis, the interview content was then divided into clusters of question responses, and the following results were found. There was some overlap between questions, but consistency was found in opinion when the results were further grouped. These areas and themes were consistent in both sets of interviews, although some of the details were different.

Overall, these opinion leaders had a big-picture approach to the topics they raised, which will be shown to be distinctly different to the opinions of the 'at-the-coal-face' practicing pharmacists, interviewed after the PAART Healthy Hearts project [203] in 2009, the analysis of which is described in the following chapter (Chapter 5).

For each series of interviews, participants provided a variety of opinions, with each being passionate about the profession, but divergent in their view of the issues of most concern. Due to low numbers, there were a variety of opinions and only some saturation of themes. Each interviewee did have a particular focus, some visionary, and some more specific. The opinion leaders were chosen because of their high profile, so a visionary answer was expected, but the variety of answers was not.

The following themes emerged from the interview material and will be discussed in more detail.

4.3.1 Theme: Participation, teamwork and collaboration

Pharmacy was considered as being on the outside of national health policy development and not included as a stakeholder, except in a limited capacity. Interviewees commented on the general lack of involvement and engagement with health policy, particularly at a developmental stage with all three levels of government—national, state and local. Pharmacists appeared to be locked into pharmacy premises and not seen outside the 'four walls' of the community pharmacy itself. They suggested that pharmacists themselves should be proactive on many levels to change this:

> I think pharmacists should be more involved in policy areas, looking at how pharmaceuticals are used in practice, for example there are a number of significant bodies where pharmacy isn't represented on them…We need to be involved professionally, be more involved in high-level policy committees… (*S9.1*)

The participants implied that the politics within the profession prevented more participation in various spheres of health policy development, and this added to the lack of outside knowledge of the ability of the profession and how it could contribute in other domains. They thought that some pharmacy organisations have specific objectives aligned to their members' requirements (such as the PGA), and did not act for all pharmacists, but still had a considerable influence and profile within the profession, and

thus portrayed a narrow view:

> ...I think we sit on the perimeter…I mean the Guild are a particularly astute operation group, they define their area well, they stick with it and they produce good outcomes within their own area, but that is a very limited view of what pharmacy is. (*S10.1*)

Participants voiced the view that other professions do not appreciate, or know what a pharmacist can 'do'. Additional aspects of this same idea will be mentioned in other themes discussed in this chapter:

> But we have do a hell of a lot of work to be working with the other professional bodies, podiatry, optometry, the whole lot of them to explain what pharmacists do, what we are capable of, what abilities we have to work with the patients….what we could be doing as a team… (*S3.1*)

This theme continued in the follow-up interviews. To change this view of the profession, however, the profession itself needs to change:

> I think that pharmacists for too long have kept themselves isolated from any other healthcare professionals, they're seen as an adjunct to the whole healthcare cycle as opposed to part of the team and I think that lacks forethought… (*S7.2*)

One participant commented:

> …it's because pharmacy is seen in the pharmacy itself and we don't play in the same sandpit that health professionals do. (*S5.1*)

Locally, pharmacists have to be proactive and build professional relationships to improve patient outcomes:

> …I think many pharmacists have had the view well the doctors aren't asking me for my input so I'm not going to give input, as opposed to looking at it from the other point of view saying, I know I can help the patient by providing this information to the doctor, and the pharmacists are looking how can I build a relationship with the doctor to say, value my opinion—what I'm giving you is useful, it's going to have an increased clinical outcome. Without putting the doctor offside but I think it's definitely an opportunity that pharmacists they used to take and need to take regularly. (*S7.2*)

Pharmacists can contribute to local health care teams but have to make the first step. The expanded role for pharmacists is often talked about, but the pharmacists

themselves have to promote and offer their services, payment or no payment. Results from the second round of interviews, suggested that the evidence indicated multidisciplinary teams are in the best interests of the patient. Better teamwork and collaboration with local health professionals, was considered as one way forward for the pharmacy profession. One respondent commented on the challenge in pharmacy was to become a team member itself, and not see itself as being in control:

> I think the challenges are that it has to remove itself from being an isolated profession that it sees itself to be in control of the healthcare of their customers… (*S10.1*)

And also not to be defined by the CPAs and associated rebates and payments, however:

> …remuneration to the agreement largely shapes practice… (*S4.2*)

Again, the isolation, and the view and excuses given by the profession itself:

> Pharmacists have been very insular and they think they're wonderful but not everybody thinks they're wonderful. It's really, lack of communication and lack of integration with others. (*S5.2*)

> I'd like to see them more involved in the health teams. But it's really hard to do that sort of thing—shared care type stuff, when you can't get out of the shop, also traditionally; we haven't been seen as part of the health team... (*S8.1*)

Rural community practice was one area, in which participants thought that this teamwork does occur. Participants stated that rural practitioners usually had good collaboration with the local health teams and health team management, through their personal relationships with local health practitioners. The relationships with the local GPs were considered closer than for urban pharmacists—for some, but not for all. These relationships were crucial, and enabled and supported practice, especially in the area of professional services:

> Yeah, I think that am certainly there are great opportunities…for greater collaboration. But having said that—there seems to be, there's always been good collaboration between health professionals in the rural areas that doesn't occur in metropolitan areas now. *(S9.1*)

> Relationships between pharmacists and GPs are crucial to be able to deliver these professional services, irrespective whether they are financial and professionally viable or not. Now if you haven't got a good relationship with your GP you'll have you know, a

> great difficulty in getting referrals, and even if you do get referrals convincing the GP of your suggestions and their appropriateness and in implementing those recommendations. So without a good relationship—the whole service is fraught with difficulties. (*S2.1*)

However, the implied collaboration that was talked about, was restricted to the areas related to medicine supply: professional requirements of the pharmacy, prescriptions and referrals and was often one–way.

In the follow-up interviews, this thinking was still evident, that rural pharmacists could do more:

> Sure, there is a lot more cooperation but I think you know rural areas and you know small towns would be the best place for a pharmacy practice to develop within a coordinated team care arrangement. I see rural pharmacy if they have the ability, and the staff and the resources, they could actually do a lot more community-wise in collaboration with their other primary healthcare colleagues. (*S5.2*)

However, some pharmacists should stop looking inwards and be part of the local community:

> So, I think pharmacists have to stop always looking inward to their own business. They need to join community groups so they can actually get a much better view what the community needs. (*S10.2*)

There should be expanded roles for pharmacy in local health care teams, but the skills of pharmacy needed to be included, and not just used as someone to tidy up and fill a drug cupboard. Outside knowledge of the capability of the pharmacist is still needed, and the pharmacy profession needs to be visible and vocal, in and out the pharmacy. If not, other professions, such as nursing, were identified as taking over the pharmacist roles:

> I think one of the biggest influences, and I'm probably a lone wolf in crying this one is the nursing profession has seen the golden glow of money and what they can be doing, and where they could go as clinical nurse consultants and all the other names they call themselves these days. (*S3.1*)

4.3.2 Theme: Public perception, customer loyalty and societal influences

The following three areas emerged as themes related to the public and pharmacy

customers: public perception, customer loyalty, and societal influences.

Public perception

The consumer was seen as the most powerful influence on pharmacy practice. Coupled with the actual day-to-day activities of the pharmacist, the opinion leaders questioned if pharmacists were actually practicing as they say they do, and how and if, the profession complies with professional standards and guidelines. Consumers expected rapid dispensing times, and this may be the imperative of the individual pharmacy, without allowing the time or be given, any accompanying counselling and professional service input, by the pharmacist:

> ...if the consumer goes in, and they don't get what would we say we get then the whole profession loses credibility. (*S4.1*)
>
> …our biggest problem is drugs because they all think that we can give out a box of medicines…I think that the most important value of pharmacists is not the medicines but the advice that goes with it… (*S11.2*)
>
> …but if you actually ask pharmacists what they do to improve medication compliance in practice they really don't do a lot—however, what they should do is a lot… (*S9.1*)
>
> …they know they're supposed to do things but they don't do with routinely…pharmacy is too opportunistic. It's both a strength and a weakness, the consumers love it they can just walk in any time, but it is its greatest weakness because opportunistic is not systematic. (*S4.1*)

It was also suggested in the follow-up interviews that the public do not know what to expect, or should expect, from their pharmacy and pharmacist:

> So, if you go into your pharmacy and Joe Blow who's the pharmacist and has a chat to you about the footy and asks you how your wife is and those types of things, you'd think Joe Blow's a good bloke, and you'd rate him highly on any satisfaction scores. But if you know that Joe Blow the pharmacist should be doing these types of activities to improve your healthcare, then you might start to say hang on there's bit of a gap here between what I'm getting, and what I should be getting, so I don't think a lot of patients or consumers know what the reference point should be for community pharmacies. (*S2.2*)

The interviewees in follow-up interviews said that the consumers have now been offered a price-focused model and so some standards of care and service cannot

compete. Discount pharmacy is now very much the norm, compared to when the first series of interviews was conducted. Several interviewees said pharmacy is complacent and doing things the way it has always done, instead of taking the opportunities to change practice:

> Discount Pharmacy stuff has been to me, it's really devaluing the professionalism and people see, you know, pharmacy more as a discount shop you know, to me the professional component of certainly community pharmacy has diminished, so I see that as being quite sad really. (*S8.2*)

However, another key opinion leader observed the discount pharmacies served an additional purpose, in halting the potential threat of supermarket pharmacy in Australia.

Customer loyalty

In rural practice, customers were seen to be more loyal and appreciative of the services; although it was pointed out that, there might not be competition close by, to challenge this assertion. Consumers tended to visit the same pharmacies over a lifetime, and the next generation then continued the tradition. They were often personally known to the pharmacist and pharmacy staff. In rural pharmacy:

> …customers are very loyal in rural pharmacy… (*S8.1*)
>
> …rural customers were um, more relaxed, more happy to wait a lot more appreciative of a lot of the services that were provided… (*S6.1*)
>
> So we have our customers with us in a lot of cases for life, and going into the next generation as well, so I think the pharmacy respect is very strong in rural environments. (*S9.1*)

It was acknowledged, that still services in rural areas must be competitive and realistic, even if there was no nearby competition. Not all towns could support a community pharmacy, or one that provided pharmacy professional services. There were differing models of community practice such as the discount model, now in rural areas, and thus now providing an alternative form of community pharmacy practice for consumers.

One particular rural example raised, was that the local hospital, as a customer, was usually supplied with medications centrally. However, it would call on the local

pharmacist if a crisis occurred, either for stock or information. It was suggested that local suppliers should be used for all stock, and thus local health services in turn would support the local community pharmacy:

> Why would you isolate a community pharmacist in a rural setting, from the supply of the hospital, except he's asked to go up there at midnight, if something, if the person's medicine (has) not been delivered? (*S1.1*)

In the second round, consumer loyalty was still a positive issue in rural areas but the wider introduction of the discount models of pharmacy, was thought to have now changed this allegiance somewhat.

Societal influences

Society itself might lead the future change in pharmacy, to one of more professional services and advice, in all practices. It was suggested that price ultimately drives consumers, and the two models of pharmacy (discount and service) could co-exist as described below using a Primary Health Care Model, developed by this practitioner:

> …the Primary Health Care Model actually will focus on patient care diagnosis, information and health solution, with or without the product and you will find the consumers actually need both and they quite often visit both type of pharmacy. When they want to buy things, they will go to My Chemist, because it is cheaper and so on, if they have a cold or whatever, they will go to a pharmacy where they know that they are going to get that advice and professional input. (*S11.1*)

In the follow-up interview, the participant was asked if this model was still applicable:

> Absolutely, because pharmacy is actually in the front line of primary care and primary care has a major impact in just about every single step in the health system. (*S11.2*)

This interviewee then commented that a number people who have GP consultations for problems, could have been seen by a pharmacist, thus preventing a waste of valuable health resources.

Discounted medication and lack of consumer service was also mentioned in the follow-up interviews. Price was still a major factor influencing customers, even in rural areas, over and above the model of practice, as described by this rural pharmacist:

> I think the major influence is, in any pharmacy, whether rural or metropolitan or whatever, is price… (*S7.1*)
>
> …so it's to find the balance between being a discount pharmacy and the whole warehousey type thing and being a traditional pharmacy with good prices… (*S7.1*)

4.3.3 Theme: Controlling organisations and governance of pharmacy in Australia

Pharmacy organisations, and the accompanying funding/payment models and regulations, together with the pharmacist categories, which the profession has created for itself, influences its practice. This regulation of pharmacy practice externally, also influences how the profession acts—what it can do within the political, and within its own environment. Professional politics at various levels affect practice, and how the profession is perceived as a whole, from both interview series:

> ...the regulation of pharmacy, how its—competition policy. (*S4.1* and *S4.2*)
>
> …it's the politics at national, national and state level…that is the big barrier rather than a micro, micro level. (*S5.1*)

Comments on the pharmacy organisations, representing pharmacists in different spheres of practice, were hard to draw from the participants, as these were well-known opinion leaders in the profession in Australia, and they did not want some of the comments linked to them personally. On the other hand, some were more vocal with their opinions, encouraging organisations to work together:

> I do think…the Guild and the Society need to work together… (*S4.1*)

This sentiment was still evident in the follow-up interviews.

The PGA represents 'pharmacy' in the CPAs, but its full members are pharmacy owners, and it is perceived as a very strong organisation. All other member pharmacists are associate non-voting members. One suggested that, as a sole signatory to the CPAs, the components of the agreements might be what is good for the PGA, but not necessarily good for the profession. One interviewee said:

> Yeah, the Pharmacy Guild is regarded as an organisation that really wants to control the pharmacy profession but there's a problem there in…they represent an increasingly

small number of pharmacists… (*S5.1*)

The funding arrangements with the Commonwealth Government for the PBS under the CPAs, are regarded as the commercial mainstay for community pharmacy practice in Australia. The majority of the funding is for drug supply and dispensing, and other professional programs were considered secondary. Dispensing fees were considered to be the centre of each CPA, as they usually provide the income necessary to make community pharmacies viable. In the first series of interviews, some argued that dispensing supply could be seen as a professional service, but current pharmacy nomenclature in Australia, perpetuates the terminology assuming dispensing is the act of labelling, counselling and handing out of medication, and that professional services are different. This debate of various aspects of health care in pharmacy, supply or service, usually takes place within the profession itself and without any resolution to date:

> …what's this profession has got to ask itself is whether it wants to be in the supply game alone or whether it wants to be in the service game. (*S1.1*)
>
> …the influence of drug supply—people involved in drug supply over professional services. (*S5.1*)

Reimbursement by the CPA payment for professional programs, when the initial set of interviews were conducted in 2008–2010, was in its infancy and relatively poorly rebated compared to those in the current 5CPA and 6CPA. These programs still would not support a pharmacy business to be financially viable, without the accompanying dispensing revenue:

> …the funding arrangement—the PBS, the Guild Government Agreement and so on, because at the end of the day, no matter what your ideology is, whatever, what your approach, you still have to make it work for you as a worker, as a health professional and funding arrangement is the basic reason for that. (*S11.1*)

Since the first series of interviews, funding for professional services in pharmacies was still through the CPAs. Some programs, such as HMRs, had been capped to 20 per month, while others for diabetes (DMAS) and asthma were no longer funded. In the 5CPA and 6CPA, some programs were funded by a finite monetary pool, so reimbursement depended on the number of claims. Payments for MedsChecks and

Clinical Interventions were, and are made to the pharmacy in this manner.

The CPA still shapes community pharmacy. However, with decreased income from drugs, and restrictions to increases in dispensing fees, pharmacies have to look now and into the future, to other avenues to maintain business viability:

> Agreements do shape where we go and what we can do…. (*S4.1*)
>
> It is a matter of time, I don't know whether it is going to be five years or ten years or fifty years, but I think the government movement and the Guild Agreement will sooner or later stop, the ownership restrictions are likely to be eased or removed… (*S11.1*)

Lack of pharmacy leadership, was again mentioned by most, as well as that the profession was holding itself back, and not reaching its potential:

> People aren't seeing the positive, although we're creating half the problem, I think we're actually holding ourselves back. We need leadership in the profession to say OK, you know we need to unite behind this and say look this is the direction we should take. (*S6.2*)

These organisations do control the profession despite that:

> There are a lot more pharmacists out there than there are pharmacies. (*S3.2*)

4.3.4 Theme: Ownership of pharmacies

Pharmacy ownership is currently restricted to registered pharmacists, with a few exceptions. The community pharmacy owners are thus a strong influence on any practice change:

> …I do not think the ownership model hinders it, the owners hinder it. So, the people we've got in ownership hinder what we're actually doing so whether it's the mindset, whether it's how they're going about things, whether it's how they're thinking, about how the profession should work, how their pharmacy should work. (*S2.1*)

In the first series of interviews, it was suggested that profitability of the pharmacy was not assured in the current climate, compared to a decade previously, and some pharmacies had gone into receivership. In the follow-up interviews, the issues of price disclosure on prescription medicine, the cost or buying and owning a pharmacy and its competition, especially from the discount pharmacies, had impacted the stability of the

business as a whole. But one suggested:

> The ownership status doesn't determine what the level of service might be. (*S1.2*)

It was also thought the funding models of community pharmacy agreements would change or disappear in time, and pharmacy ownership restrictions would cease, leading to open ownership. One owner opinion leader thought that this would be detrimental to the pharmacy profession, but others did not concur with this opinion. From the first series (2008–2010):

> …open ownership, we are one of the last bastions of closed pharmacy ownership worldwide, so that will have to change. I think at the present we are safe, I would realistically say for three to five years… (*S7.1*)

In the follow-up interviews, in 2016, interviewees then thought ownership would still stay with the profession. The King Review (Review of Pharmacy Remuneration and Regulation) [204], has investigated this issue as part of its report. It was noted, however, by participants, that there are currently many corporate groups of pharmacies with multiple owners, representing the majority of the pharmacies. This different emerging ownership model, compared to the much older model of single owner pharmacies was discussed in Chapter 2.

4.3.5 Theme: The pharmacist role

Management training, professional services and other specialist services are now necessities of current practice. However, a reluctance to change practice and roles, still affects staff numbers (pharmacists, technicians and assistants), service and reliability in all areas of pharmacy. Some pharmacists were hesitant to leave the dispensary, such as for a blood pressure measurement. From series one, one pharmacist considered:

> The barriers are actually the pharmacists themselves. (*S9.1*)
>
> …you ask them to go out and actually do a blood pressure test or do an actual skin penetration or whatever, you know, they get into a bit of a tizz. (*S9.1*)

Participants thought that the dispensary was where most income for the pharmacy was generated, and thus where most time should be allocated. It was proposed by most interviewees that counselling was part of the dispensing process; however the original

2003 National Pharmacy Database project [40] separated this action from the drug selection, labelling and computer entry functions required for legal dispensing. Some thought the figure of 75% of a pharmacist's time spent in the dispensary suggested by Berbatis et al. [40] should be reversed, with 75% of time spent out of the dispensary. The confounder of the pharmacy having a forward pharmacy model of practice, which might have affected the responses in the survey, was questioned by some key opinion leaders interviewed.

It was proposed by the National Pharmacy database report that the use of a dispensary technician would decrease the time in the dispensary, and this was confirmed by the participants. However, it was acknowledged that some pharmacists preferred to be in the dispensary 'hiding', and they had to accept that the dispensary may not solely be the pharmacist's domain, and that other models of practice exist:

> …you don't need a university degree to dispense, you definitely don't, there's no point in spending four years of university and one year doing a registration to learn to dispense, I can train a dispensary technician in six months on-the-job training to be excellent. (*S7.1*)

Comment was made about the inflexibility of the current legal dispensing requirements, in allowing the innovative use of a video link for rural and remote areas, where a complete pharmacy service, would not be sustainable due to staffing shortages. In South Australia, an example of this model was forced to close. Legislation has hampered rural innovation, and others have confirmed this:

> Lack of any concept by the bureaucrats, including pharmacy bureaucrats about the 'come on, let's get real here—don't tell me why you can't do it, tell me how are you going to do it'… (*S1.1*)

It was suggested that additional qualifications such as a Master of Business Administration (MBA), could make the pharmacist approach problems within their role in a different manner, one that accepted that change and uncertainty, were a natural part of today's business and management approaches. However, this option was not usually taught at undergraduate level, but had to be gained post-graduation by pharmacists:

> …one of the major hurdles of the pharmacy profession…the ability to accept uncertainty

> and the ability to make decisions in an imperfect world. (*S11.1*)
>
> This is what I did, I went and got an MBA, by doing these sorts of things, I pulled myself out of our old pharmacy confinement, and I was able to look at things differently (*S11.1*)

Within pharmacy practice, there was a perceived professional service and dispensing mismatch, with dispensing seen as a supply function, with or without, the accompanying counselling service and professional services. The participants thought professional services should be part of pharmacy practice, and reliance on supply alone would be to the detriment of the profession, and ultimately to pharmacy businesses.

However, from the follow-up interviews, one interviewee had changed his previous opinion, and pharmacists did not necessarily have to be involved with supply, but could focus on the professional service side of practice. In the first series, it was suggested that pharmacies cannot 'do it all', and may have to decide their preferred approach to practice and business—supply only, or supply and professional service. Community pharmacy now, and into the future, cannot rely on dispensing alone, from the first series:

> I am nervous about the future of pharmacy…we can't rely on dispensing anymore (*S7.1*)

But also:

> I don't think that you can do it all...I think we are kidding ourselves to think we can… (*S10.1*)
>
> It's just not simple—really isn't and people who go 'gung ho' for one model are actually doing detriment—you know creating problems with the others. There just needs to be a balanced approach, you really needs to be balanced. (*S2.1*)

However, in both series, they thought that something needs to change, for ongoing survival of community pharmacy:

> We need to go back to being health providers not retailers. (*S6.2*)
>
> ...we've seen a supply dominating any professional services and that is the dissociation of supply and professionalism, which is going to be the detriment of this profession. (*S1.1*)
>
> Whereas in the past, you could just run a business and provide your services and not necessarily have to think too much about the profitability of the pharmacy, whereas

> nowadays there's so much competition. (*S6.1*)

The participants felt the profession was still unsure of its role in health care, which was coupled with a pharmacist generalist and specialist practice incongruity. Evidence was required, such as a demonstration and commitment to the pharmacist role:

> Pharmacists are the most educated proponents of drug therapy there is within the health system. The complexity of drugs, the complexity of management, complexity of comorbidity, the complexity of co-administration absolutely requires a person with the knowledge in therapeutics which can only be provided by the profession of pharmacy, under the current structure. (*S1.2*)

In the follow-up interviews, several mentioned that nurses were taking a pharmacist–like role in providing medication reviews and advice. It was a concern that if the pharmacy profession does not become more prominent in this role, other professions will take it up, more so than is done already:

> What I'm saying is, if the model in which that distribution operates at the moment, is so strangling, is so suffocating for development, that if we are not careful the need will be there—there are no question the need will be there, the void will simply be replaced by someone else. (*S1.2*)

Despite the practice restrictions, rural practice was still considered the area, in which most innovation can take place. Its pharmacists were proactive, and often the only health professional, but they still had the same practice restrictions as those in urban areas. From the follow-up series:

> So, your role may well be significantly greater from a primary care perspective, minor illness sort of perspective than somebody who has a medical centre pharmacy in the CBD. People come to you first because you're accessible yet you can only do the same things that somebody else in a CBD pharmacy can do. (*S2.2*)

In rural areas, pharmacists were seen as senior community figures and:

> …the role that the community pharmacist plays in rural communities I think is quite unique in a way—particularly because of the much closer inter-multidisciplinary interactions that occur. (*S1.2*)

Yet some do not take advantage, or make the opportunities to expand and extend

practice and say “no, we just do what we've always done” (*S4.2*) and thus do not support the local health professionals and the community. Alternatively, it was suggested that rural pharmacists are problem solvers, and ‘see a job that needs to be done, and do it’, and collaborate to use the finite resources available for the best outcomes.

> …in some respects the rural areas will be more rewarding because of that close collaboration and you just do things because you have to. (*S2.2*)

The participants thought that members of the profession as a whole, were considered trustworthy and the personal touch enhanced this trust:

> I think you know, overall, we’re very trusted…we ought to protect that. (*S4.1*)
>
> I don’t want to see us getting so big that we lose the personal touch…and if we lose that people contact, I think we’ve lost a lot. (*S4.1*)

In series one, advocating for medication adherence was considered as core business by the participants:

> …the bottom line is, that’s a core part of professional practice…We have to understand the **importance** of what the drugs are doing and why and how—I mean that’s a part of our role in the health team, so it involves liaising with the patient, liaising with the doctor, understanding what’s going on, and just liaising with the general health team so I think it’s absolutely crucial… (*S8.1*)

Promoting health was seen as a part of business and health promotion was considered to be the same concept. Differences were expressed as to whether health promotion was a philosophy, or an activity of practice. Even the pharmacy student in series one had seen the apparent conflict:

> …you’re extremely highly skilled at a lot of health aspects, um, and I don’t see that fully utilised at the moment. (*S6.1*)

From the pharmacist practitioners themselves:

> Ohhh absolutely—health promotion…is a core service for community pharmacy and for pharmacists in general, health promotion, we need to be doing that. However, we under do it and we don’t promote preventive health as much (as) we should. (*S2.1*)

One suggested that younger pharmacists would know more about health promotion,

than older pharmacists, and the community talk approach may be suited to one personality over another, but in this group, it was considered as an activity done by only a few:

> I think, very few pharmacists do it in what period—over the life of their career they've probably done, you know most pharmacists would of done one or two I would have thought. (*S4.1*)

Other professions, such as nurses, have taken on the health promotion role. This was despite the availability of what one participant considered the 5,000 community pharmacies, which were an existing network of health promotion sites. Lack of time was considered a barrier to undertake these activities:

> I think time is a barrier for us, Helen, and like in getting out there. Like, our pharmacists are stretched to the nth degree, there's not enough…..love them to, but in reality it's not happening. (*S9.1*)

Overall, pharmacists had a specific approach to health promotion, which could be seen by other professions, as a fraction of the available scope of the health promotion practices and activities, and was usually conducted in an elementary form in the pharmacy. A change of practice philosophy was needed to make better use of the pharmacy profession, and thus provide a significant influence on Australia's health focusing on risk factors of lack of exercise, smoking and improving diet, in addition to promoting the use of medication. In series one and the follow-up series this interviewee thought:

> Now, health prevention has got to be a major key platform for health of the future. You know, you know, if you look at our disease processes in this country, about 60% are preventable—by three simple things—exercise, smoking and diet. Sixty percent of the disease burden in this country will disappear with exercise smoking and diet. Why wouldn't government be interested in preventative health programmes? (*S1.1*)
>
> We should be remodelling our pharmacies to be centres of preventive health care and service delivery as opposed to um, you know discount operations… (*S2.1*)

Interviewees thought that in the future, professional services would become more widespread. It was not until the 5CPA, and the PPI Program, which included primary health care, that some specific disease state services, also called QUM services, which

received financial support. Pharmacists can change, and future could be as suggested below:

> …I think that's one of our main challenges, to deliver professional service, so patients see us as a profession of health care providers, government see us as a profession of health care providers as opposed to what we're seeing is as purveyors of product. (*S9.1*)
>
> I think you will see a gradual extension, think that probably in the medium term, that would see the goal—every pharmacy does diabetes, asthma and Home Medicine Reviews, and every pharmacy does medication profiling, and if we can get all of those…I'd like to have another crack at smoking cessation with spirometry. (*S4.1*)
>
> I believe it's in like counselling and preventative-type approach. Definitely not staying behind the counter and certainly in professional development and running programs like whether it be weight, through blood cholesterol, diabetes or whatever. I think our future rests there, in both preventative and knowledge, like, helping the patients. (*S9.1*)

The opinion leaders interviewed agreed that pharmacists were capable of conducting, with appropriate business models in place, enhanced or professional pharmacy services. However, over time, it was felt that many opportunities have been lost. In addition, not all of the profession charges for these services, thus making it inconsistent across the country. Many were already providing the services suggested by the table (National Pharmacy Database Table DB7-1, 2003) (Appendix 2) but questioned the wording and exact nature of the service given the titles. For example, the inclusion of body piercing as an enhanced pharmacy service was questioned with laughter. Ambiguity was demonstrated as one participant interpreted a commercial weight management program as nutrition support, instead of a professional weight management service as referred to in Chapter 2.

> Nutritional support, we have already jumped into that. In fact, like, albeit like a retailing product in Kate Morgan©, it really has had a dynamic effect on some of our businesses (*S9.1*)

However, some participants felt pharmacy assistants were much better at conducting some of these activities in the areas of smoking cessation, blood pressure readings or weight reduction, because of their life experiences. Remarks were made that the pharmacy profession had done itself a disservice over time by introducing practitioners such as iridologists, when it could have had health professionals such as nurses,

mothercraft nurses, or diabetic educators, in the pharmacy, assisting in service provision:

> We had the opportunity in the last decade and some have been saying this, the last 20 years…to see pharmacists as the Community Health Centre. So what are we to do? We don't have Mother Craft Nurses. We don't have a Diabetes Educator, coming in once a fortnight, we have an iridologist coming in. And you wonder why the mainstream of medical, from which our interaction must enhance, is being impeded by the perception that we are not serious... (*S1.1*)

The ability or lack of ability, by the profession to charge for services has been mentioned previously. Reiterating:

> It's just that when you're asking them to go out to say charge a fee, oh, we can't do that. Well, why can't you do that? (*S9.1*)
>
> I think a lot of those services should be charged and can be charged, and in fact in my pharmacy, I didn't charge and people were surprised I didn't charge and they were quite willing to pay. The only problem is that it has to be an industry approach, if one pharmacist is not charging, then the whole thing just collapses. (*S11.1*)

In addition, any service must be a quality service and meet industry standards, despite non-payment:

> But you've got to make sure that people who are doing it…are doing it well and can do it to a decent standard. (*S2.1*)
>
> …there's a lot of stuff they could do if they had the opportunity to and if they're trained appropriately that they can do to improve patient health, but when you don't get paid for it, then it really limits the opportunity to do it and do it well. (*S8.2*)

However, in the follow-up series quality service is the key:

> What I'm more concerned about is the quality of the service that offers, because if you offer quality service and you offer wide-ranging quality service it will be profitable. If you provide…a service people will pay for the service, be it people, individuals or even governments. Governments will pay for services which improve self-outcomes which is an investment, no matter what it costs it's an investment. (*S6.2*)

Historically, other professions employed within the pharmacy have conducted screening, thus providing some credibility but consequently, the ability of the

pharmacist to also conduct screening, was underestimated and ignored:

> …but why wouldn't you have, why wouldn't you expect a distribution network of community-based practitioners, right, of preventative health-care strategies. I mean, if we go back 15 years, when we tried to put in the APF the guidelines for blood pressure and cholesterol testing and all the hue and cry that this profession, we could have had a nurse practitioner in there or practice nurse in—do those things screening—what a magnificent context it would be, all right, and why, and that's the tragedy. You have a network of some 5,000 pharmacies in this country…highly educated people with a professional ethos that is there…it's either of overt or covert, but is still there—it's got to be drawn out. And we are not deemed to be relevant players when you've got the distribution network of over 5,000 for this country? (*S1.1*)

Opinion was expressed again in this section of questions about other health professionals not realising the skills and competence of pharmacists. This was confounded by the retail nature of community pharmacy practice and the sale of spurious and non-evidenced based products and services:

> …I don't think our allied health professionals and GPs truly understand pharmacists, what pharmacists do, and our education levels, and our competency levels. They do tend to see us as glorified shop-keepers and they particularly pick up on the fact that we sell some pretty dubious gear at times, um, and 'they all use that', their mindset will be, 'oh, well, you sell FatBlaster so, what do you know about weight loss? (*S3.1*)

Hospital pharmacists, on the other hand, have expanded their roles because they were not restricted by the same regulatory framework, and could push the boundaries of their practice:

> …hospital are the trail blazers as for a number of areas because they often don't have the regulatory framework that our community practitioners have to deal with, and often do pharmacist prescribing, pharmacist anticoagulation clinics, pharmacist pre-assessment clinics, write up drug charts... (*S9.1*)

However, overall, participants still thought pharmacists were perceived as suppliers of products, and not suppliers of health care services. Customers go to pharmacies for a product, with or without a service, not a service alone.

In the follow-up interviews, one interviewee said that the profession needs to take more

responsibility for its actions:

> To be honest with you I think we have a very much a low base.
>
> *(Interviewer) So when you say the high level you mean clinical skills? Interventions?*
>
> A level where pharmacists take responsibility for medication outcomes.
>
> *(Interviewer) OK, so more than 'lick and stick'?*
>
> More than 'lick and stick'. It is unfortunately we don't take responsibility for that across the board. We take responsibility for discrete activities medication management sort of cycle, likely around the supply of the medicine as prescribed by the prescriber safely. We don't necessarily take responsibility for the outcomes associated with that medication use and I think we need to. (*S2.2*)

This low level of responsibility described, means many are working below their potential level of expertise, and this is compounded by the solitary environment in which pharmacists work. Apart from one interviewee, who suggested the need for change management facilitators, there were no co-ordinated ideas on how to move the profession in this direction. The following comment was made about what has been holding the profession back in the past five years in the second series:

> Oh the lack of advancement, the lack of innovation, the lack of disruption in the community pharmacy environment it's just been the status quo and the biggest risk to a profession. The biggest risk to service delivery is just to stay the same and we've stayed the same, and it's really unfortunate because we haven't advanced, we haven't developed, we haven't used the platform of 5 years of security around the Community Pharmacy Agreement to catapult forward and to deliver services and to improve our health outcomes, so largely inactivity has being the biggest challenge—we just haven't developed and again it's unfortunate. (*S2.2*)

Overall, unfortunately there was no significant change in practice or in pharmacist roles, suggested by the interviewees, between the two series of interviews, or differences in rural and urban practice.

4.3.6 Theme: The pharmacist workforce

Participants thought that workforce shortages, the availability of positions, especially for current undergraduate students; wages, cultural issues, lifestyle and associated

costs were the issues of concern for all, and especially for rural pharmacists. From series one:

> …from the student's point of view, you look forward to anything when you get, got into this profession and you enrolled in pharmacy five years ago, you know, you could walk into a job basically, after graduation, where as I've seen the increase in, I think 4 schools in the last 4 years, and the number of graduates, the number of students within existing schools, that's going to have an impact on our profession as well. (*S6.1*)

Opinion leaders were only asked about the immediate future, of that in 5 to 10 years' time. Most of these comments related to the status quo of pharmacy practice and the workforce, as we know it in Australia, and did not suggest a long-term approach to any significant change of practice and workforce. Remuneration and pharmacists leaving the profession, were the main issues in the area of workforce, for the follow-up interviews. With university debt, and dissatisfaction by the younger pharmacists, it was thought that some were looking outside for another profession, e.g. medicine. Another interviewee also spoke of cultural issues, and lack of family support especially for those with strong family group ties, such as those from Asian and Middle Eastern backgrounds, which essentially stop this group of pharmacists from ever moving to rural locations, distant from their family. In both series, retention of younger pharmacists, was described as an issue, because current models, focusing on supply and dispensing, were thought not to interest these practitioners, so much so, that they chose to leave the profession:

> …Why are they leaving us? Why do they dislike pharmacy? Because that's what we are looking at. Why aren't we keeping them interested? And if we don't deal with that we have actually got people who say 'I don't want to be a pharmacist any more'. Why don't they want to be a pharmacist? Because they're busy, ah…they see themselves as just a machine churning out prescriptions. (*S2.1*)

> What we are in danger of is actually not realising that when the good people are leaving, provide crappy service which will stuff up everything and people will lose faith in the profession and somebody else will take over this role. (*S11.2*)

Negativity expressed by some does not help alleviate this issue:

> …the negativity with the profession and just a general negative sentiment about the

profession… (*S11.2*)

In the first interview series, one participant suggested the current shortages of rural pharmacists would not be overcome, and another suggested that there was a lack of 'good' pharmacists in rural areas. Another comment made, was that locums could work in a rural area without engaging with the community, but for those practitioners working there already, the relationships with other health professionals were good. In the second round, one commented that pharmacists worked in rural areas, but then moved back to larger centres for domestic reasons such as school for their children.

Wages were an important factor mentioned in the follow-up interviews. They were considered low, as expressed by one interviewee:

> …because the pharmacy award is so out of date that pharmacists can be employed at the wage that is comparable to a check out person in a supermarket… (*S11.2*)

It was suggested that discount pharmacies pay less, and the wages for pharmacist have decreased over the past 10 years. In addition, a contributing factor was the number of schools of pharmacy, with a consequent increase of registered pharmacists available, and many of those looking for variety in their work. Compared to the first series, pharmacists are now in general medical practices, but unless they were undertaking HMRs, they had no access to any other funding, other than that provided by the practice itself.

The rural workforce itself was thought to be more stable and self-sufficient. However, there were recruitment and retention issues, although it was suggested the situation had not worsened in the past 10 years. One of the keys to assisting retention was providing a good graduate experience, to encourage instigation and continuing employment. However, one leader thought the lack of availability of pharmacists for rural areas will never be answered, so alternative measures to deal with this problem should be explored:

> …regardless of what initiative the government has put in, what initiatives the profession put in, I think one thing we have got to accept is that, in general, on the balance of probability, rural health work force, the shortage will never be overcome. (*S11.1*)
>
> I think that is the key, pharmacists in the bush providing good graduate year

> opportunities and good rural placement opportunities for kids from the bush to say, look this is what a pharmacist does and you don't have to settle for just packing Websters© or dispensing 500 scripts a day. (*S7.1*)

Rural pharmacists do have less peer support, and can be isolated from other health professionals, but there were suggested lifestyle advantages in rural practice. Those interviewed who practiced in rural areas, were passionate about living and working in the bush, and would not work elsewhere. Marketing the lifestyle and the community approach, and not just the professional nature of the position, was suggested as one initiative. In addition, a 'come and try' approach to practice could be used, with a short–term contract given, as proposed by one staff pharmacist. However, the comments were made about the need for 'good' pharmacists, and employers will not accept just any applicant. The profession wants 'good' pharmacists who are prepared to stay:

> And it's also harder, because you're a peer isolated, being unable to ring someone up and say 'I'm trying to do this stupid PMP and I can't get the website to work'. They don't often have that sort of peer integration sort of thing happening, so there's…..to a degree Auspharm* and the SIG groups do address, but there nowhere near as much is needed. (*S3.1*)
>
> *Auspharm online pharmacist discussion and news forum at the time.
>
> …people in smaller areas perhaps have to be more self–sufficient…less peer support…less people to be locums…better health team management…because more personal sort of relationships…dynamics of a small community. I think those sorts of things really affect rural community pharmacy. (*S8.1*)

It was suggested that lifestyle benefits should be promoted, as distinct from professional benefits, in order to entice staff:

> …we have to market the lifestyle, so we can get people to come to the rural areas. (*S8.1*)
>
> …it is a good lifestyle in the country… (*S7.1*)
>
> I…like being a pharmacist in the bush… (*S7.1*)

In recent years, one idea for improving the workforce was to set up a School of Pharmacy in a rural location, to attract rurally based students. The participant suggested this school, however, only attracted students who were not able to get into metropolitan schools, and did not specifically attract the original target group, those to

be trained and retained as rural practitioners.

In series one, examples of personal costs to live in rural or remote areas were identified as a satellite phone, internet, and the expected associated travel costs. It was noted that these expenses were not reimbursed by existing allowance schemes within the CPAs:

> IT needs to be sorted… (*S4.1*)
>
> …you've got travel costs are higher, maintaining your competency and your education has issues to be able to access and get to things. Ah, your costs tend to be higher... (*S3.1*)

In the follow-series, this had changed:

> …the absolute increase in social media use, internet, and cheap airfares, means that connectivity and access to regional areas to people who can say, I can do it for 12 months it's not such a huge issue anymore… (*S7.2*)

The primary issues for rural pharmacy were not related to pharmacy professional skills and knowledge but to location, innovation, lifestyle and the ability of the practitioner to be inventive and collaborative, with other health professionals in the local community. In the follow-up interviews, these opinions were reiterated. Payment incentives have not provided a solution to increase the rural workforce. However, current funding models also prevent more opportunities and innovation in rural and regional areas by assuming pharmacy practice is the same, wherever the location.

4.3.7 Theme: Differences in rural community pharmacy in Australia

Many comments about rural pharmacy practice have been made in the previous themes' results. Rural practitioners see a problem and solve it; they are innovators, because this is the nature of living in a rural location:

> I think the rural differences are purely 'on the ground' differences. So, there's the same sort of system influences with regards to funding, with regards to internal and external drivers but often pharmacists who are located in rural areas do things, because things need to be done. (*S2.2*)

Staff consistency

Some issues relating to rural practice have been mentioned in the previous sections; however, there are staff issues when there is no long-term pharmacist present. One

participant suggested employed and rotated pharmacists do not stay long in any location, and thus do not provide an ongoing continual 'local' face of the pharmacist within the pharmacy, especially in rural areas:

> ...someone comes in every three months, so you never know who the pharmacist is going to be there, you never know their name. I don't (know) how there is any continuity of care, they just seem to rotate them through…that's how it is and I think that to me is a bit sad from the point of view, you know, the community supporting their local pharmacist, because it's not their local pharmacist at all—so to me that's, you know to keep your credibility especially in a rural area, that sort of thing really detracts from it (*S8.1*)

Workforce stability, particularly for new services implementation, was considered crucial for best practice, and reflected on the whole profession whether rural or urban, if new services were withdrawn because of staff changes:

> It is, because you can't start doing anything or expanding your services or whatever if you don't have a stable workforce, because there's nothing worse than putting in a great new thing and then people chuff off and then you've got to withdraw the service, I mean those sort of things are particularly damaging to the profession generally. (*S8.1*)

These sentiments were reiterated in the interviews from the follow-up series, in that the discount and corporate structure is now becoming the norm for pharmacy in Australia. Lifestyle and collaboration with other health professionals were two positive features of rural practice, but on the negative side, remuneration, practice models, and job expectations were the issues for these practitioners. Getting the right rural practitioner was paramount, but not a panacea.

Innovators in rural pharmacy practice

Rural practitioners were seen as innovative and adaptable to change, which occurred much faster than their city counterparts. They could overcome professional boundaries. They were regarded as having more skills and knowledge to manage a wide range of services within a community pharmacy, those skills not usually seen in the city. However, when asked to name the specific differences, the activities named were not particular to the pharmacy profession, but services such as banking or accountancy.

> …rural pharmacists are more of a jack-of-all-trades...

(Interviewer) What do you think, pharmacists have to do in rural areas to get that expression 'jack-of-all-trades' that's different to..?

Well, I mean, they're an accountant, they manage a bank, bank transactions or these—Medicare stuff. (*S9.1*)

Drivers for innovation were personality type, scarcity of practitioners, as well as knowledge of the local community and health workforce:

…I have come to conclusion on about rural pharmacy is that they are the leaders in innovation because of the scarcity. (*S10.1*)

DMAS, we have a diabetes educator in town, but there is a 12-month waiting list to get in, and so, I say to somebody we can offer this service, it is not exactly the same as the diabetes educator… (*S7.1*)

…people in rural areas tend to be more innovative um, because they can and because that's the type of people that they are. (*S2.1*)

I think in rural remote areas, they adapt much faster to a changing health environment …is scarcity of workforce and therefore they tend to respond quickly by picking up opportunities when they can, so my experience of rural workforce, was that they actually participate more broadly in healthcare provision than urban retail pharmacies do, because they see the need and respond to it. (*S10.1*)

This innovation philosophy by rural pharmacists was reiterated in the follow-up interviews. However, the additional jobs of being an accountant or bank manager suggested might not appeal to all.

4.4 Diagrammatic models of pharmacy practice—discussion and results of key opinion leader interviews

The leaders expressed many opinions about rural pharmacy practice. However, many of the issues raised were not specifically about rural practice, but rather the profession as a whole. There were many recurring themes with little to separate the two interview series. Additional issues that were discussed in the follow-up series, were teamwork and expanded collaborative models of practice, together with professional services.

In both series, the lack of pharmacist involvement in policy at all levels was raised as an issue. It was suggested some professional organisations represented relatively few

pharmacists, but have influence over many. The interviewees said that pharmacists as a profession, did not mix and collaborate with other health professionals. This issue was particularly brought out in the follow-up series of interviews. Many suggested that the public, other professions, and organisations still did not know what a pharmacist could do—the breadth and depth of this role. This was hampered by the current visibility of the retail pharmacy, and the lack of visibility of the pharmacists themselves, be they employees or owners. This concern resonates continually in the pharmacy literature, and has done so over many years. Whether in urban or rural practice, this is a constant, and relates to not only to views of consumers, but also the views of other health professions. Many of these issues could be identified from the literature, with no apparent progress towards improvement.

In the follow-up series, the leaders thought culture was an issue, as this may affect rural recruitment, as some pharmacists do not want to leave the family support structure. Comment was also made about additional Schools of Pharmacy, but as can be seen in Chapter 2, this has not been reflected in a substantial increase in pharmacist numbers, despite interviewees suggesting that this might be the case. These factors will in turn affect the availability of long-term staff in rural practice. Observations were also made of locum pharmacists, on short-term contracts, who did not engage with the community. Consequently, there was a lack of attachment, not only with the customers, but to local health professionals and the community as a whole. This hampers professional collaboration, and any building of trust.

The pharmacist leaders considered rural pharmacists were innovators, with a 'can do' attitude. They questioned the amount of time in the dispensary, and suggested professional services were the way of the future. Payment for services was raised as an issue, as pharmacists were reluctant to charge, despite the need for income. Dispensing income may not always be relied upon, so other professional income streams need to be explored.

Comment was made about the profession as a whole, of the standard and public expectations, of the services given. It was suggested that there was a potential lack of consistency in professional services, health promotion activities and medication adherence activities within pharmacies. Consequently, the public do not know what to

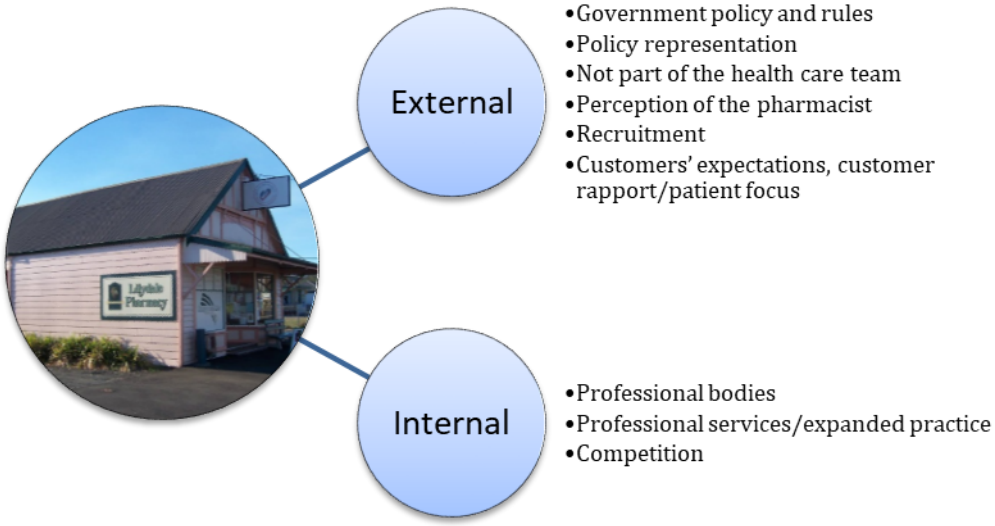
expect when entering a pharmacy. The public do however, expect a reasonable price model and many frequent the discount models of practice. These issues were not specific to rural community pharmacies.

After the two series of interviews the proposed model of the critical issues for pharmacy in Australia, and for those in rural practice were suggested in Figure 4.1 below:

Figure 4.1: Critical issues for pharmacy: Model of key opinion leader interviews and follow-up interview series

*Interview follow-up series only

Figure 4.2: External and internal issues for rural community pharmacy: Combined model for opinion leader interview series one and follow-up interview series



The issues summarised above in Figure 4.2 have a somewhat different focus in rural and remote Australia. These external and internal issues will be compared to those identified by practitioners themselves in Chapters 5, 6 and 7.

4.5 Summary

In summary, the diagrammatic models can be used to highlight the main points that have evolved from the analysis of the opinion leader interviews. The rural context of lifestyle was considered different, but no professional pharmacy knowledge and skills specific to rural practice were identified by the participants. Rural pharmacists were seen as innovative and adaptable, with good relationships with local health professionals. Interviewees thought that rural workforce issues may be something for which there is no solution, and in this area, remuneration was inadequate and staff turnover and rostering problems, did exist. Areas of concern for rural pharmacists were IT, professional development and the concern of peer isolation. Additional personal costs were pointed out by the interviewees, but for some rural areas recruitment was no longer an issue. The key opinion leaders suggested that rural customers were loyal, but still cognisant of prices of goods and services.

Many of the issues identified by the opinion leaders, related to the profession as a whole, and how the broad and varied skills of the profession, were not understood by other health practitioners. To compound this, many pharmacists did not provide

comprehensive professional services, in preventative health, chronic disease support, health promotion and medication adherence. It was suggested, that in addition to some of the services provided, pharmacies were not adhering to the models and depth required by the professional practice standards. However, these concerns were not specific to those pharmacists in rural or remote practice.

Interprofessional collaboration, and working together, involved each profession providing specific input or advice, and clarification of issues, as a part of normal daily practice. The opinion leaders did suggest that a pharmacist as a health professional could provide a number of skills, not just those pertaining to medicine knowledge and QUM and thus could contribute to the broad interprofessional approach to health care. This could happen at any level, from national policy development to a local community health professional collaboration. Overall, the opinion leaders were concerned about the current professional approach to pharmacy practice in Australia. Again, this was not specific to rural practice.

Participants talked not about conflict between health professionals, but just that the pharmacy profession was not included in plans, committees and decisions made in health care in this country. Two interviewees spoke of the nursing profession, taking over the role of pharmacists, but not what the pharmacy profession could do to reverse this trend.

Participants suggested that the differences in rural practice related to the context. They did not relate to any different professional skills and competencies required as a pharmacist, but more an acceptance of the lifestyle requirements of living and working in a rural or remote part of Australia.

One interviewee said that the future of the profession as a whole requires:

> Vision…..leadership…..commitment to change…..getting out of the past…..creating its own future…..I am very frustrated and very angry with members of this profession to see what's going on…All I know is that it's not a shared vision, and it should be a shared vision, and we have a mission—this profession should have a mission statement. (*S1.1*)

The same practitioner said in the follow-up series, the driver for the future and change is in the profession and:

It's up to itself. (*S1.2*)

The next chapter (Chapter 5), will describe a similar qualitative analysis of interviews with community pharmacists and research practitioners, who participated in the Pharmacist Assessment of Adherence, Risk and Treatment in Cardiovascular Disease (PAART CVD which was often simplified to PAART) project. This pilot project investigated cardiac care support services in community pharmacies, and thus the participants' views could be used to provide a comparison to that of the key opinion leaders interviewed for this chapter of the thesis.

Chapter 5: Analysis of interviews of pharmacist practitioners from the PAART study, on rural pharmacy practice, the challenges and the future of community pharmacy practice

The 4CPA PAART pilot study project, was also known as the 'Healthy Hearts' Project (2012–3) [203, 205, 206]. The community pharmacists and research team pharmacists were interviewed for their opinions on rural community pharmacy practice, for this chapter of the thesis.

The PAART study itself investigated the role community pharmacists could play in preventing cardiovascular disease (CVD) complications in their customers. The pharmacies recruited for the project were located in Tasmania and Victoria, with half from rural areas (PhARIA 2 and above) and the rest were in urban/metropolitan locations (PhARIA 1). These community pharmacists also completed a written survey as part of the overall study and together with their interview opinions of the project; these particular results were included in the final report. However, the analysis of the PAART pharmacists' interviews presented in this chapter have not been described elsewhere in the literature or project reports. The core interview questions used, were the same as those given to the key opinion leaders in series one, interviewed in Chapter 4, which thus enabled a comparison in opinions, between those 'at-the-coal-face' with key opinion leaders about rural/urban differences in community practice.

Pharmacists do have the knowledge and ability to conduct basic cardiovascular screening programs, as many projects in the past attest. The PAART study described below used a more complex intervention, than some previous CVD prevention research examples [207, 208]. After a two-day face-to-face education workshop describing the project, its aims, and objectives, and presentations including background clinical updates, the participant community pharmacists recruited up to 10 patients each, based upon the following criteria:

- aged 50 to74 years
- taking prescribed antihypertensive and/or cholesterol-lowering medication
- no history of a cardiovascular event or established CVD

Baseline medication, health (nutrition status, alcohol consumption, levels of physical activity, screening for possible depression diagnosis and cardiovascular history) as well as body measurement assessments, were conducted by a consultant research pharmacist who had also undergone additional training. This research pharmacist then wrote a management plan, which was sent to the participating community pharmacist for implementation. The community pharmacist then conducted multiple interventions over five face-to-face sessions: the initial session taking an average of 34 minutes, and subsequent meetings taking on average 16–22 minutes. It was found that 78% of patients attended all five sessions. The community pharmacists used motivational interviewing techniques, to encourage better lifestyle choices (smoking cessation, decreased alcohol consumption, weight reduction, increased physical activity and mood improvement), and also promoted medication adherence, with the aim to improve the patient's overall heart health, and therefore a consequent decrease in their CVD risk. Replications of the initial measurements, were undertaken by the consultant research pharmacist, after the interviews were completed. The data was analysed to see if patients could achieve a significant decrease in CVD risk factors, in the approximately six-month active period of the project. The results showed the PAART approach produced a significant reduction in patients' waist measurement, increased weight loss, improved nutrition status and a reduced CVD risk. This success has been reported elsewhere [203, 205, 206].

This chapter will look at the pharmacist participants' views of community pharmacy practice, especially any potential differences between that in rural and urban areas, with this motivated group who took part in the PAART project.

5.1 Aims of the study

The aims of the study in Chapter 5 were to:

- elicit the views of community pharmacist practitioners and researchers, who took part in the PAART study, and their opinions of community pharmacy practice
- gather their views on differences between rural and urban community pharmacy practice
- compare and contrast these views with those of key opinion leaders interviewed previously

5.2 Methods

The community pharmacists and pharmacist researchers who participated in the PAART pilot program were interviewed, with ethics approval. The questions used, were those given to the key opinion leaders in the first interview series, described in the previous chapter. This enabled a comparison of responses between the different participant groups. The interviews were transcribed and analysed.

5.2.1. Selection of participants

The community pharmacist participants and pharmacist researchers were selected by the project team using purposive selection. Half practiced in rural, and half in urban areas, as pharmacies from both geographic areas were required under the project funding guidelines. These participants were also identified as having an interest in the provision of new professional practice services.

The project and interview requirements for each participant group are listed below.

Community pharmacy participants:

- attend the PAART education workshop
- recruit up to 10 participants per pharmacy
- conduct the series of 5 intervention interviews with each patient
- complete final project reporting and be available for follow-up face-to-face interviews

In addition, for the project management and review consultant pharmacists:

- for both, the ability to attend the PAART education workshop specific to their role
- review consultant pharmacists—the ability to conduct medication and health reviews and produce a management plan, repeat the assessments and report at the end of the project, for each patient participant
- project management pharmacists—the ability to liaise with all community and review consultant pharmacists
- for both, the ability to complete final project reporting and be available for follow-up face-to-face interviews

The final participant pharmacist list was reviewed and accepted by the project

management committee. The researcher and project management pharmacists were selected and employed by the project team.

The researcher and project management pharmacists were included in this analysis because of their varied experiences in pharmacy practice. They had worked in many rural and remote areas of Australia during their career with experiences (past and present) ranging from that of community or hospital pharmacist, pharmacy owner, accredited pharmacist, university academic and researcher. Thus, their familiarity with rural community pharmacy practice warranted their inclusion in this interview cohort.

5.2.2 Method of conducting the participant interviews

Each interview question was designed to be generic for all practice locations. Opinions were sought from all for each question, about possible differences between urban and rural or remote community pharmacy practice. The questions asked were grouped for analysis, and the numbers did not necessarily correlate with the order used in the interview schedule (Appendix 4) to encourage interview flow. The current position and background for each interviewee was also requested in their own words, to provide a demographic base for this sub-study of the PAART project.

The nine community pharmacist participants and four research pharmacists, identified by a code below, together with their location and skill area is shown in Table 5.1 below.

Table 5.1: Pharmacist PAART project participants interview list

Code	Pharmacy role and location (Tasmania and Victoria)
RP1, 2, 5, 7, 9	Rural pharmacists: PhARIA range 2–5
UP3, 4, 6, 8	Urban/metropolitan pharmacists: PhARIA 1
RTP1, 2, 3, 4	Research team and project management pharmacists: PhARIA 1

One rural community pharmacist was not approached for an interview because he did not recruit any patients, despite attending the initial education workshop, and provision of additional project support.

The interview schedule developed (by HH) was reviewed and approved by the PAART management committee. Conducted in 2009, the first part of the interview schedule used the same questions for the key opinion leaders in series one. The second part of

this interview contained questions about the PAART program. Only the anonymous survey questions and pharmacist opinions of the project were used in the final report [203]; the qualitative interview responses described in this thesis, were not used in the report.

The interviews used open-ended questions, and were conducted by a single interviewer/PhD student (HH). All except two interviews, were conducted face-to-face, with the final two researcher interviews, conducted by phone due to distance and interviewee availability.

Each semi–structured interview took approximately one hour to complete, with some longer. The subject was encouraged to talk, and provide reflection on previous questions asked. This additional reflection often happened at the end of the interview.

5.2.3 Transcription methods

The interviews were transcribed by the same commercial transcription service as used in the previous chapter interviews. Each interview was checked by the interviewer/PhD student (HH) for accuracy together with tonal emphasis and pitch variations, which were then annotated onto the written record.

Participants were offered a copy of the transcript, to confirm accuracy, and was sent to each electronically, with none being returned for corrections.

5.2.4 Analysis methods

As before, the transcribed interviews were analysed by constant comparison, using a combination of the NVivo© qualitative data analysis Software (QSR International Pty Ltd) thematic analysis program, and the use of paper-based copies, to allow visual comparison using highlighting of various sections and segments.

Again, as required by the qualitative analysis approach, and described in Chapter 4, continual reading, grouping and study of the transcripts enabled the common themes to be identified and classified, despite the small number of interviewees [187, 196, 202]. The classification sets were reviewed reflectively by the researcher (HH). Some regrouping of themes took place when all were classified to finalise the resultant groups.

5.2.5 Ethics approval applications

As this PAART project was conducted by two universities, approval was required and given from both the Monash University Standing Committee on Ethics in Research involving Humans (SCERH) (Approval Number CF08/0305–2008000110) and the Tasmanian Human Research Ethics Committee (H0009995). (Appendix 9). The final ethics report approval confirmation email is also in Appendix 9.

5.3 Results

The interview content was divided into clusters of question responses for exploration and analysis. There was some overlap between questions but consistency was found in opinion when the results were divided into broad areas—issues relating to internal practice within the profession, and those external and imposed upon the profession. This will be discussed later in this chapter and again in Chapter 8, of this thesis.

Although some questions were not necessarily, specifically about rural practice, it was important to get a sense of the overall feeling about community pharmacy practice, from all the participants. The following themes were derived from this analysis.

5.3.1 Theme: Participation, teamwork and collaboration

Two participants thought that pharmacists were still considered not integrated into the local health care team, and had to earn their place to contribute in any way. Complicating this was the changing persona of some health professionals such as doctors. Described by rural pharmacists:

> I reckon no matter where you are, you have to be just part of the team, in your local area, you have to be part of the team that provides healthcare… (*RP5*)
>
> ...at the moment is that we are not seen as part of the core, you read any document and the pharmacist is never included as part of the team and yet we as pharmacists know, that person can be absolutely key, especially if there's medication involved. (*RP7*)

Moreover, from another, pharmacists must earn the right:

> We have got to earn our place or earn the respect to be part of the team, rather than being just an aside, you know, which is somehow, sometimes how you feel that you are looked at by any GP practice.... (*RP5*)

One participant also thought that newer rural GPs put up constraints on collaboration, influencing the pharmacist's ability to be part of the local health care team, and contributing to community and patient health care:

> …what I am saying is that the new lot coming up are less sure of themselves… they put this gruff behaviour because they didn't want to be questioned and, now everybody is a lot more rational about no-one can know everything, so.... (*RP5*)

5.3.2 Theme: Public perception

Patients or customers were seen by some as the biggest influence on any community pharmacy, in rural or urban practice:

> …I would say that it is your patients that are the biggest influence, but I think that is a very old-fashioned thing to think, because I think that a lot of pharmacies now are geared towards turnover really, the way their shelves are stocked... (*RP9*)

> The public's expectations are probably the greatest thing... (*UP3*)

Customers influence the makeup of community pharmacy, with their product price expectations, particularly compared to those prices charged by discount pharmacies. This in turn affects staffing, marketing, the appearance, stock choices, health promotion activities and service delivery of the pharmacy itself. Pharmacists also thought that the discounters themselves influenced practice, because they in turn could influence any customer. There is also an impact on other pharmacies such as:

> …when the catalogue comes around that tells you what, your local Terry Whites are doing, you think, shit, that is cheaper than I can buy it! (*RP5*)

Interviewees considered discounter pharmacies were there for a 'quick buck'. The question of perception of the profession's credibility as a health professional, was the inferred result of this style of practice. In rural areas the concerns were:

> I think price, whatever you call it…with discounters and things like that, and so undermining, the fact that it is a community pharmacy. (*RP9*)

> ...competition is a huge influence and these new super cheap pharmacies opening have a huge influence on the pharmacy. (*RP1*)

However, it could be argued that this also occurs in current urban practice as one

described:

> our credibility and being perceived to be professional health givers rather than just money grabbing... (*UP1*)

All considered that pharmacists still needed people contact, a side of the profession particularly valued by this group of practitioners—whether this is by dispensing and counselling, or by the opportunities available through professional programs. However,

> I think we have got to be careful that we don't get too professional, that we lose the contact with people, but you just get so tangled up in all those other programs and everything. (*RP2*)

In addition, there are opportunities that do exist now:

> …there is a bloke back at-the-coal-face, dispensing all the scripts but it is huge opportunities for younger ones but I think that, I think probably in the future that there won't be… (*RP2*)

These pharmacists thought that pharmacies in supermarkets could be considered the future, due to financial pressure from both customers and the Government. This could lead to a consequent loss of community pharmacies, as they are today, and the innate customer knowledge they have:

> Unfortunately, people won't realise how much information and support they've had from pharmacy unless it's gone. And it will be too late, to all of a sudden you know to replace your local pharmacist who knows you and knows your kids, and that sort of thing, until they've already gone. (*UP3*)

> I honestly believe that retail pharmacy will end up in supermarkets. (*RP1*)

5.3.3 Theme: Controlling organisations and governance of pharmacy in Australia

Rural participants commented that the major influence on practice was by the owners, and from the PGA. The PGA's performance was questioned by rural pharmacists:

> I think PBS pressures, as in the constant grind to reduce government expenditure on it and also the wheeler dealing that goes on behind the scenes with the Guild and the generic companies and all of that sort of stuff... (*RP9*)

> ...the poor action of the Guild, I think the Guild are very weak and allow us to be treated very poorly, Government get stuck into us at every opportunity. (*RP1*)

Overall, in Australia, rural participants thought that all practice was dictated by money, competition and rules:

> Money. The National Health is obviously our major, because they are a major customer, they are our biggest customer, but they are also the one that actually then changes the rules. (*RP5*)
>
> …your biggest competition is from the government itself. (*RP5*)
>
> …well you have a set of rules and you have got to obey them, everything is the rules. (*RP2*)

5.3.4 Theme: Ownership of pharmacies

Restriction on ownership and pharmacy location were considered challenges, because of the potential costs for anyone wishing to become an owner. Lack of change has occurred over time, because an adequate income could be made from the existing practice models.

One of the researchers, an ex-owner, thought:

> ...so you are in a protected situation where you don't have to push yourself to be better and find new ways and do new services, you can just keep doing whatever you have been doing for thirty years… (*RTP2*)

Others thought ownership was an area not understood by those outside, and was one that was essentially unachievable to most. From rural respondents:

> I sometimes struggle to agree with some of their (owners) impacts even though it doesn't impact me because I'm not an owner… (*RTP4*)
>
> …money, because no-one else can get in... (*RTP2*)

Nevertheless, these comments on ownership were not specific to those from rural practice as urban respondents also had the same sentiments.

5.3.5 Theme: The pharmacist role

The comments below on the differing roles of the pharmacist focussed both on current

and future roles, which, it was hoped, would incorporate professional services such as those, provided in the PAART project. However, there is a wide range of current roles with some focused on service, others on profit. This approach is not new:

> …ever since I have been in pharmacy, which is, well I registered in 1970, I have been told by leaders at conferences, "pharmacy is at the cross roads" and it is still at the cross roads, and that is because there is this great dichotomy between professional service and profit and if you go way back, I mean I did that History of Pharmacy, it was a history of pharmaceuticals and it was the same then, in the 1880s you had the guys who were just out there trying to sell stuff, and you had the other ones who wanted to concentrate on education, getting the students trained, raising the standards of the profession… (*RTP1*)

It was acknowledged that dispensing was still the primary role of community pharmacy practice. When asked if 75% of a pharmacist's time was spent in the dispensary, pharmacists and researchers answered 'yes', that this was a correct estimate, but change was possible:

> …that is 25% over-the-counter stuff, 75% scripts so within that 75% there is the scripts and the counselling for the scripts. (*RTP3*)

> Well it is my intention to change that, and I don't know what my percentage would be personally but I know that the way it is set up here, we can spend a lot more time in the shop rather than in the dispensary. (*RP9*)

It was thought that some pharmacists might feel more comfortable and 'hide' in the dispensary. Rural pharmacists said:

> Look, it depends on the pharmacy but probably, yeah. I mean, you know, they're really comfortable in the dispensary too (laugh). Well, that's who we are. (*RTP4*)

However, it was said that pharmacists could spend 50% of time with customers, particularly if a technician was used. Two commented that the structure of their workplaces allowed for discussion and counselling while dispensing, and this could be interpreted as work 'in the dispensary' or 'in the shop'. Three commented that this figure (75%) was location and premises specific, but overall dispensing and its associated services was their role, whether this is in rural or urban practice.

Two suggested rural customers were more likely to wait and accept counselling, or 'a

chat' that would be offered, while urban/metropolitan customers did not expect this service. One commented that the outer urban pharmacy in which she worked was small, and this personal approach occurred, but admitted this was not the norm for other pharmacies in this particular area.

Professional services were seen as a facet of pharmacy practice that was professionally satisfying to the pharmacist, and a benefit to the patient. Rural pharmacists in particular thought after the PAART project:

> ...it is much more satisfying I would have to say and there are occasions when you really feel you have been of benefit to the patient. (*RTP1*)
>
> I think that can only be a good thing and the people who are taking them on, are going to change customer's perception of what is involved. (*RP9*)

Whilst adding to their workload, interviewees also thought that these services did add a level of excitement to practice, and allowed pharmacists to be challenged:

> ...these extra things that keep adding in and adding in, it is not just coming to work, it is what makes it interesting too, but it is not just coming to work and rote doing 300 scripts. (*RP2*)

Some pharmacist interviewees, who had experience with the DMAS program, suggested that pharmacy practice should be more focussed on service, not necessarily on product. As there is no existing payment for such services, this could then influence business viability:

> ...I just think that some pharmacies are just way too focused on making a dollar…because they are not getting remunerated for services and it has to be on product… (*RP7*)

The PAART project was one that these pharmacists acknowledged had both motivated lifestyle changes in their patients, using their newfound abilities, while expanding their own professional capabilities.

A number of other different professional programs and services were mentioned by the participants, with the opinion that these could become routine practice, e.g. 'Healthy Hearts', DMAS, asthma education and International Normalised Ratio (INR) monitoring, together with some limited prescribing such as dose adjustment of some continuous medications. This approach would also support the counselling provided by hospitals,

as it was suggested that patients currently 'do not take it in' at the time of discharge.

> I am not really sure these days, whether all the clinical input is always warranted, because 90% of patients really don't really take it on board, while they are in hospital. (*RP5*)

Expanded pharmacist roles could include:

> I think we will end up in community pharmacy doing more, I don't know whether you would call it associated...or not main core medical things, but we will do a whole lot more things like the weight loss and the blood pressure monitoring, the drug discussions with the patients… (*RP5*)

> Limited prescribing, not necessarily to a degree where a doctor would give you a diagnosis and you do the prescribing, but helping with things like warfarin dosage and cholesterol monitoring, maybe changing the strength of medications determined by results, blood pressure, those sorts of things. (*RP9*)

Pharmacists still need people contact in their role, a side of the profession valued by these practitioners—whether this is by dispensing and counselling, or participation in professional programs. Younger, and not the older practitioners, were considered to be the pharmacists who will take up these professional challenges and opportunities. This suggestion was not borne out by the average age of the pharmacy practitioners participating in this trial, one of whom had been a pharmacist for 3 years, and all others for more than 20 years.

Some were concerned about the profession's lack of wanting to change its role, or questioned if the voice of those who want change is not heard, or their views were expressed openly. Epitomised by a researcher:

> …so it concerns me that not everyone is embracing these opportunities there and....perhaps the people that want to embrace opportunities don't have the vocal voices to make the change. (*RTP3*)

Some had particular personal concerns about changes, and the negative perception of the practice role, such as the supply of S3 pain medications, and the time and cost impost of DAAs. However, overall, they thought that the visual premises could send the wrong message:

> I think the biggest thing is maintaining our image and our professionalism and again about how the profession, whether we want to be more forceful about what's acceptable and what is not acceptable, all of these programmes are great but if you have got, everything is half priced, flashed all over the front, then the rest of the health profession is not going to take us seriously enough, and that's got to be one of the biggest issues. (*RP7*)

However, on the positive side:

> …research in the University; it changes your perspective rather than just being under the 'fluoros' on the treadmill. (*RP7*)

The final comment from a rural pharmacist, which was reflected by some of the key opinion leader statements in the previous chapter, was that pharmacists still need an income from their profession, whether this be a role be in service provision, or in supply. The dispensing role is still paramount:

> …because you do things for the love of the job, but you have still got to feed your kids and have an income, so you can't say I am going to do everything for free and not do scripts, you are not going to last, so it is more the people that are organising the funding with the government I suppose. (*RTP3*)

5.3.6 Theme: The pharmacist workforce

This group did not focus on recruitment or retention of staff. The workforce issues spoken about were personal and included, having to 'keep-up', past and potential practice changes, wages, service expectations and remuneration, adequate time for the doing the job, and pharmacist value.

The current pharmacist workforce is required to have up-to-date information, especially because patients themselves now have access to so much more information than in the past. Keeping up, and having a 'bottomless pit' of medication knowledge, was a workforce pressure felt by all:

> ...there is a lot more information online for patients and there is also, I guess a lot more that pharmacists can do, or that have access to... (*UP8*)

> It is just all the things that you, I suppose you don't have to do them but if you don't do them, you feel like you are being left behind, you are not keeping up with everything,

> otherwise you just sort of, you have got to keep up with all the latest and everything. (*RP2*)

Since registration, these participants have seen many changes in practice over time, such as computerisation instead of hand-written prescription entries, and even talking to patients. The workforce has had to adapt to a patient-focused model:

> I think patient focus...It was a very, you know when I started we didn't talk to patients unless they asked us. (*UP3*)

Adding to existing workloads were the acceptance of more and more services. Apathy to change from within, and procrastination to change still existed amongst the profession. However, there are those who despite these challenges, continue to provide PAART additional services (after the completion of the project) because of the positive patient results, despite no monetary or time reimbursement:

> Yes, because pharmacists are pressed for time as we all know…You know how there are always the ones who will go that extra mile. (*RTP2*)

However, balanced against this was the following sentiment:

> I am here to work for my boss and to get my wages, so a warm glow doesn't do that. (*RP9*)

The pharmacist's ability to charge, together with an appropriate payment for this service was questioned by all participants. One discrepancy between the anonymous survey [203], and the face-to-face interview, was that on interview, it was thought that this service should attract a charge. However, previous expectations and experience of free advice might deter customers even to the extent of retaining their allegiance to the pharmacy. It was thought that customers would not pay, even though each session ran for 10–30 minutes with a pharmacist. The anonymous PAART pharmacist participant survey suggested charges per visit of AUD$1–5 (median) with the range from AUD$0 to AUD$6–10 for up to 30 minutes of time were appropriate. Pharmacists said:

> ...we always undervalue ourselves and I think it is historical. (RTP2)

Since this survey, there have been programs supported through the 5CPA and 6CPA, where pharmacists can claim for a service, and this can be offered to customers without charge (e.g. MedsChecks). For instance, the Chemmart pharmacy group in Australia now

also offer a 'Healthcheck', at an approximate AUD$20 cost, but statistics on its acceptance and use have not been found.

There were comments about the pharmacist not charging at all, for professional services, or the concern the customer would not pay. From rural pharmacists:

> Pharmacists in general do far too much for nothing and that's one of my pet hates of the job, and people expect it and the government expects it and it is just-not right, we don't get...we are professionals, we should be paid for it. (*RP1*)

> ...if I had of said that it is going to cost you [AUD]$10 each time you come in, which wouldn't have covered the cost, then probably wouldn't have gotten anyone to join... (*RP9*)

Urban pharmacists concurred:

> Maybe because as pharmacists we are not used to charging for professional service... (*UP8*)

Pharmacists are currently paid for supply, above service, under the CPA. An additional comment was made that currently pharmacists can always refer to doctors, and therefore are not used to making final decisions, that will ultimately impact on patient care.

> I think a bit of lack of courage in leadership, I think doctors are braver in a way, because they are used to putting their heads on the line, they are used to having to make a decision and stick with it, whereas pharmacists can always, if they are worried, they can always just say, it is too hard for me, go and see the doctor, they are not used to making bold decisions, so I think that is something that might develop. (*RTP1*)

The suggestion was that professional service models, may thus provide a form of leadership allowing for 'bold decisions' to be made on patient care:

> Yes, being paid for our knowledge and our service rather than for selling goods. (*RTP1*)

Time for training for delivery of professional services was considered a workforce issue by one urban pharmacist, together with the probable negligible cash return of this type of service currently:

> I mean we probably need some more training but then that takes time. Most pharmacists work long hours. And at the end of the day you don't feel like going and

> doing more training…Also like if there's no cash return on it, you know. (*UP6*)

Convincing others, especially owners, of value of this program could also be difficult:

> ...Inertia, as in you know getting it rolling, getting things rolling, getting people to try it out…return on investment for owners… (*RP9*)

Thus, the ability and willingness to take up these opportunities, despite uncertain payment or return on investment, rests with the professional workforce. Barriers of training, time and staff availability, together with inertia and procrastination within the profession, mean opportunities are not taken up. Supply still supplants service, in any current pharmacy workforce—rural or urban.

5.3.7 Theme: Differences in rural community pharmacy in Australia

The participants were constantly asked about what they thought were the differences in rural pharmacy practice compared to urban practice. It can be seen using the participants' codes in the previous quotes, that there were no firm or obvious differences, between those in rural and urban practice.

Some differences proposed are discussed below. The acceptable pace of current rural practice, combined with the requirement for a personal life balance, and recruitment issues, were concerns for those practicing in rural areas:

> ...it is just the pace, the pharmacies… (*RP2*)
>
> …unable to get pharmacists, that is probably the biggest challenge. (*RP1*)
>
> You are on call twenty-four hours a day, seven days a week, you never can be anonymous, which is good and bad but that can be a bad thing because they know where you live and they know you are happy to go out at night, all that sort of stuff, and yeah, so you are always on call and that is a bad thing. But the good things far outweigh that, absolutely. (*RP1*)

Rural pharmacists enjoyed their relationships with customers. They knew their customers, and could single out prospective participants in the PAART project at the introductory education workshop. Even though they considered themselves to be on call for 24 hours per day, the good aspects of rural practice outweighed the bad:

> Probably the biggest difference…is the rapport you have with your customers. The

> loyalty that customers show their pharmacists, in most cases and look that may be the case in city pharmacies but I doubt it, and the fact in country pharmacies, you not only know your customers as customers or patients, but you know them socially too probably, and you know them to say hello to them up the street and you see them everywhere, you see them at football and talk to them so that's probably the biggest difference between, the biggest advantage of rural pharmacy, you just know everybody so well. (*RP1*)

Working with a local health team for this project was important to the participants, and particularly mentioned by those from rural areas. However, in the PAART project feedback, participation from local doctors was rare. Different to urban pharmacist participants, one rural pharmacy was going to continue with the program as presented, with patients nominated by the local doctor:

> We would probably do the same type of format, but of course, the doctors will do the original set of data... (*RP5*)

Again, it was the rural pharmacists who primarily commented on maintaining a version of the service, by still 'having a chat' with patients who were involved, to encourage further improvements in heart health. The in-depth knowledge provided by the project enabled these pharmacists to feel empowered to contribute to their patient's continuing health care:

> Look I've got one of those who still comes in once a month and we just sit down and have a little chat. Jumps on the scales and I measure his circumference because that was something that he and I found was beneficial for us... (*MP3*)

> Well...I am not continuing to do it but they are still actively talking to me about it... (*RP1*)

> I am going to miss having a sit down and chat and we have just kept that going, it means that you have a better relationship, a deeper relationship... (RP7)

Comment was made that rural practice models were specific to rural areas, due to the nature of the population, and expected service provision. This was described by one owner practitioner as:

> …what attracts someone to buying in a rural area, is that they do want to have that community connection…and again it harps back to the fact that they can't, if you are in a rural area, where no one is passing through, you can't choose the model of high volume

turnover, you **have** to choose this model of forward pharmacy and professional services and that sort of thing, because it is the only model that will actually work for you. (*RP7*)

5.4 Diagrammatic models of pharmacy practice–discussion and results of PAART pharmacists' interviews

Both the community pharmacists and research pharmacists, and the key opinion leaders, in the previous chapter, expressed many similar concepts and ideas. But in this PAART group, the emphasis was more on internal issues, issues pertinent to the individual practitioner, and their own practices and local health professionals, rather than those which were external, visionary or 'big picture' and affected the profession as a whole.

External influencing issues relating to the PBS and government policy were not mentioned as often by the PAART pharmacists. They were concerned if payment for professional services would come from existing CPA funds, implying some other services would be cut back. Some pharmacists had specific issues of concern, such as S2/S3 schedules and overuse of pain medication, and the time impost for preparation of DAAs.

These pharmacists believed that their 'biggest customer' was the 'Government', which in turn set the rules for community practice, and was therefore both a customer, and a competitor. Concern was expressed as to the efforts of the PGA to ensure a favourable deal for pharmacies. The influence of discount pharmacies on the profession was a concern as customers sought a better price over potential services.

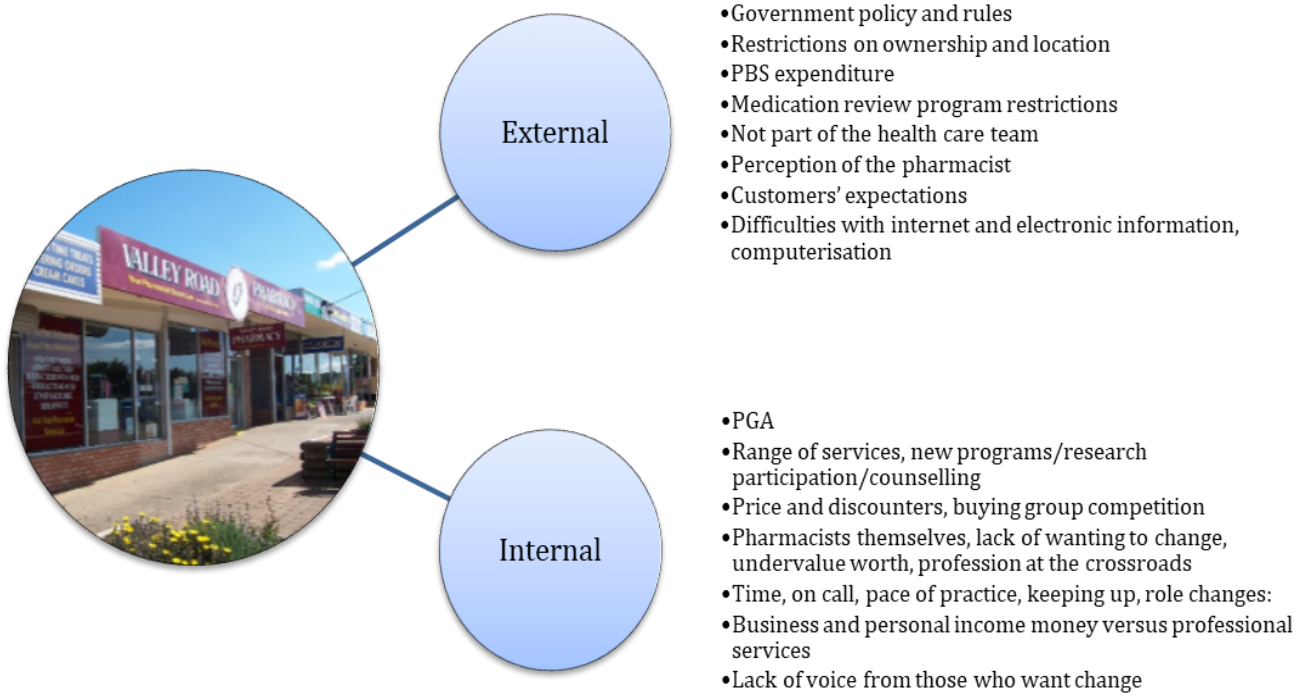
Participants talked about the significant changes that have occurred over time, including the use of computerisation and pharmacy practice itself. One did point out that change and practice differences have always existed in the profession. The need to 'keep-up' was a concern, but for this group, the challenge of introducing new professional programs, and the consequent patient engagement and learning, was welcomed. Both groups recognised changing models of practice and business, as major components of transformation for the current and future pharmacy profession.

Like the key opinion leaders, all participants were passionate about their profession with only one expressing a feeling of being 'jaded'. These pharmacists may be

considered as different to the profession as a whole, because they were a group committed to trying new practices and engaging in research opportunities. Some even asked on interview if there were more research practice-change projects in which they could contribute.

The following model shows the critical issues for PAART participant pharmacists. This model will be further discussed in Chapter 8, together with the models from Chapter 4 to identify any further differences between rural and urban community pharmacy practice. It is hoped this could then assist in identifying specific knowledge and skills that exist or are required for rural pharmacy practice.

Figure 5.1: Critical issues for pharmacists: Model for pharmacists from PAART CVD Study



5.5 Summary

Interviewing the PAART pharmacists and researchers gave another insight using the 'at-the-coal-face' pharmacists' thoughts and opinions about current differences in their profession, and its future practice. The views in this chapter were from the pharmacists who were hands-on practitioners, and were different to those from the key opinion leaders. The leaders concentrated on 'big picture items', such as the role of the profession of pharmacy in national policies, the influence and role of the professional organisations, the structure of the CPAs, and expanded practitioner roles. These were

extensive proposed changes, which would improve and expand the role of the profession. PAART practitioners identified issues that were internal in the profession and their local practice.

However, many professional concerns were similar, such as the increasing influence of discounters, the culture and attitudes of the pharmacists themselves, adequate remuneration for usual work, extra additional services and the customer expectations of price and service. PAART practitioners thought about the roll out of the CPAs, and how it affected them, and specific practice concerns such as DAAs, analgesic or S2/S3 sales. These issues were not necessarily specific to rural practice but mentioned by all in different sections of the interviews.

The PAART practitioner interviews showed that pharmacists felt they were restricted by the CPAs, but overall accepted this traditional funding model format, despite some wish for change within their own practice. They felt customers were crucial to business, and thus should not be adversely affected by any practice change. However, the pressure to change and improve practice, was felt by all. Rural pharmacists were no different, but the context and willingness of customers to sit and listen was acknowledged as unique, compared to that experienced in most city pharmacy practices. All these views will be further discussed in Chapter 8.

Other sources of data will be used in the next two chapters to investigate for potential differences in rural and urban community pharmacy practice. The following chapter (Chapter 6) will investigate two evaluations of the QCPP. The first used data from the 3CPA, and examined what services were provided by pharmacies, while the second used data from the 4CPA consumer survey, for a contrasting perspective of community pharmacy practice. These two investigations will attempt to provide additional insight, and statistical analysis, using larger data sets to look for practice differences.

Chapter 6: Comparison of community pharmacy services and differences using two CPA QCPP data sub-analyses

The Quality Care Pharmacy Program (QCPP) [209] is a nation-wide community pharmacy quality assurance program, which provides support and guidance for community pharmacies delivering all pharmacy-related undertakings, including their professional health services (Chapter 2). Pharmacies are accredited biennially. Evaluation of the QCPP is conducted every five years at the end of the CPA cycle, to measure the quality of professional services activity and customer care provided by accredited pharmacies. De-identified data, requested for these sub-analyses from the 3CPA and 4CPA evaluation data, examined responses for possible differences of practice between rural and urban pharmacies. These evaluations allowed for comparisons with other investigations and analyses undertaken.

Specific data from these two evaluations were obtained with permission from the authors. Permission was received from the data owner, the PGA. The 3CPA pharmacist data was from the second, and more the detailed of the three surveys conducted, and from the latter, 4CPA, the customer survey data was acquired. The focus of the published evaluations was the differences between QCPP accredited and non-accredited pharmacies, and not specifically rural and urban differences, thus allowing in this work further data analysis, which had not previously been conducted or published.

6.1 Aims of the study

The aims of these sub-analyses in Chapter 6 were to:

- compare pharmacist and pharmacy responses from the selected sections of the 3CPA QCPP evaluation data in relation to rural and urban areas of practice
- compare patient/consumer responses from the selected sections of the 4CPA QCPP evaluation data in relation to rural and urban areas of pharmacy practice

6.2 Sources of data

The data for these analyses were from two consecutive CPAs. The surveys and evaluations analysed were from the 3CPA QCPP evaluation (2005) [210], and the 4CPA QCPP evaluation (2010) [211].

Although the PhARIA system was added for the 3CPA evaluations, extensive further classification was required for the 4CPA evaluation data, which used postcodes rather than PhARIA rankings. A Microsoft Access© database was developed for this latter work, and the postcodes supplied were allocated a PhARIA ranking [16, 212] appropriate to the time and place to when the survey was undertaken. This then enabled a comparison to be made, using a two-fold urban/rural division with the results.

Efforts have been made to compare data within the constraints of these differing systems, differing nomenclature and the differing years in which these projects were conducted. The projects, which were quite dissimilar in nature, will be described in more detail before the discussion and a comparison is made.

6.3 Third Community Pharmacy Agreement QCPP evaluation sub-analysis

The 3CPA was signed on 16 May 2000 and covered 1 July 2000 to 30 June 2005 [70]. The QCPP evaluation (2005) [210] was undertaken to assess the impact and value of the QCPP on community pharmacy practice by the Australian College of Pharmacy Practice and Management, Quality Medication Care Pty Ltd and the Therapeutics Research Unit, University of Queensland.

The report did not specifically examine differences in perceptions and activities of rural pharmacy practice, but concluded that it was the size of the pharmacy, not the rurality, which contributed to practice differences. PhARIA 1 pharmacies were more likely to have a negative view of the future of pharmacy than those in PhARIA 2 or 3. Smaller businesses performed better than larger businesses, and those small businesses in rural locations performed better than PhARIA 1 sites. Using the raw data, given with permission from the researchers and the owners (PGA), the evidence was re-examined in order to investigate areas of the research questions about rural pharmacy practice being different to urban practice.

6.3.1 Method

The raw data from the second more detailed 3CPA QCPP pharmacist survey was examined for differences in practice between rural and urban pharmacies. A copy of the survey can be found in Appendix 5. The data requested by the researcher was anonymous, with postcodes and/or PhARIA rankings, to enable a rurality ranking to be

assigned. The original project report [210] was also studied to ensure comparisons and analysis had not been made or published previously by its authors.

6.3.2 Results

The initial survey (also called a census) was sent to 4,859 pharmacies and completed surveys were received from 4,085 pharmacies. A second more complete data set was then requested with replies received from 2,416 pharmacies, which was made available for this analysis by the original researchers. Completed by the pharmacy itself, the data obtained was presented in Microsoft Excel© spreadsheets but then required extensive reclassification prior to analysis, using IBM SPSS Statistics 22–24© (Armonk, NY: IBM Corp.). The original researchers also provided the rationale for the coding and explanation sheets. The initial spreadsheet did not have the information about professional services in pharmacies, and another spreadsheet was requested and received. This second sheet then had to be tallied against the first. Only postcodes were requested and sent, to protect the identity of the respondents. An ARIA geographic ranking was added to the more complete data set, then a PhARIA ranking was assigned for consistent analysis with other investigations undertaken for this thesis.

Several questions in this evaluation, were of interest to the subject of this thesis. Some of the data that required recoding was described as missing, where it was previously coded under one of the following three headings: don't know, not applicable or missing in the initial data. This was corrected in the final analysis.

In this 3CPA evaluation pharmacist survey, the pharmacies were asked 31 questions based on what happened in a normal full working day. The results are shown, separating responses from urban PhARIA 1 areas and the combined rural PhARIA 2–6 areas. Of the reply cohort of 2,416, 21.2% (511) pharmacies were PhARIA 2–6 and 78.8% (1,903) were PhARIA 1, which is approximately the Australian ratio described previously for urban/rural pharmacy proportions (Chapter 2).

The first pharmacy census asked for pharmacy details including location, size, if the pharmacy was part of a banner group, number of prescriptions dispensed, opening hours, staffing, turnover and proportion of prescriptions and front of shop sales, and about QCPP itself. Pharmacies could be identified as the Pharmacy Approval Number was also added. The second census added more details about the owner/managing

partner, manager if not the owner, if this person was accredited for medication reviews, qualifications of staff and benefits of the QCPP process. Also asked, was information useful to this study, to attempt to differentiate between rural and urban pharmacy practice. Pharmacies were asked about the proportion of customers who were regarded as regular, how many sought advice from the pharmacist, number of referrals made to GPs for a particular consumer enquiry or if the problem was resolved in the pharmacy, lifestyle advice given and provision of professional pharmacy services.

A series of analyses were conducted using this de-identified data to find if any statistical evidence was pertinent to this thesis, and specific to rural community pharmacy practice. With nearly 80% of pharmacies in PhARIA 1, Table 6.1 shows the actual rural distribution of the remaining pharmacies.

Table 6.1: Location of pharmacies by PhARIA using 3CPA QCPP evaluation data

PhARIA 1	PhARIA 2	PhARIA 3	PhARIA 4	PhARIA 5	PhARIA 6	Missing	PhARIA 2–6	Total
1,903 (78.8%)	175 (7.2%)	179 (7.4%)	72 (3.0%)	52 (2.2%)	33 (1.4%)	2	511 (21.2%)	2,416

The answers to some of the specific survey questions were investigated further, and the results are as follows:

Q15–6: Advice from the pharmacist, referrals to GPs and problems solved by the pharmacist

Participants were asked to estimate numbers of customers seeking advice, referrals and the problems solved by the pharmacist. The number of people seeking advice below was grouped to allow ease of analysis. The outlier of 1,690 daily customers seeking advice in one pharmacy, and all unknown values were excluded for analysis.

It can be seen in Table 6.2 below, that in 89.9% (1,654/1,840) of PhARIA 1 pharmacies, the pharmacist saw up to 20 patients per day compared to 93.8% (467/498) of rural pharmacies who saw this similar number. However, using a Chi-squared test there was no statistical difference.

Table 6.2: Number of people who sought advice from the pharmacist on a usual working day

Number of people seeking advice per day	Number of PhARIA 1 pharmacies	Number of PhARIA 2–6 pharmacies	Total
1-10	1,165 (63.3%)	351 (70.5%)	1,516
11-20	489 (26.6%)	116 (23.3%)	605
21-30	65 (3.5%)	14 (2.8%)	79
31-40	90 (4.9%)	13 (2.6%)	103
More than 41	31 (1.7%)	4 (0.8%)	35
Total	1,840	498	2,338

The mean number of people seen daily by the pharmacist in PhARIA 1 locations was 28.5, compared to 24.9 in PhARIA 2–6 areas (Table 6.3). Using Levene's test and a t test, there was a significant difference in favour of PhARIA 1 pharmacies although the absolute difference is small ($p<0.01$ equal variances assumed; $p<0.00$ equal variances not assumed). In practice, there is no real difference in the number of people seeking advice from the pharmacist on a normal working day in either urban or rural pharmacies.

Table 6.3: Mean number of people seeking advice per day from a pharmacist

Pharmacy location	n	Mean
PhARIA 1	1,839	28.48+/-27.94
PhARIA 2–6	498	24.92+/-21.91

Although the data was separated as per the pharmacy classification system, this data cannot be adjusted for pharmacy population, as the PhARIA system is multifactorial in nature, and there is no method available to find the population of the various geographic areas classified under this PhARIA system. Thus, the data cannot be adjusted for the actual population catchment of the individual pharmacy itself.

The survey also asked for an estimate of the number of people referred by the pharmacy to a GP on a usual working day (Table 6.4) and if the problem was solved by the pharmacist (Table 6.5) or the pharmacy assistant (Table 6.6), before this referral was required. Similar numbers of customers were referred to the GPs per day in each geographical area. Although similar numbers of queries were solved by the pharmacy

assistant, more PhARIA 1 pharmacists (mean 87.3%) solved problems then PhARIA 2–6 pharmacists (mean 66.9%).

Table 6.4: Percentage of customer's problems referred to a GP

Pharmacy location	n	Mean
PhARIA 1	1,850	14.6+/-13.56
PhARIA 2–6	501	13.87+/-12.25

Table 6.5: Percentage of problems resolved by the pharmacist

Pharmacy location	n	Mean
PhARIA 1	1,903	87.30+/-235.35
PhARIA 2–6	511	66.87+/-194.95

Table 6.6: Percentage of customer problems solved by the pharmacy assistant

Pharmacy location	n	Mean
PhARIA 1	1,715	79.38+/-25.52
PhARIA 2–6	478	79.11+/-27.10

A lower proportion of people had their problem resolved by the pharmacist in PhARIA 2–6 areas, compared to those in PhARIA 1 ($p<0.01$). There was no statistical significant difference with a problem solved by the pharmacy assistant or the number of referrals to the GP in either location.

Data was not available for Q17: What lifestyle advice or referrals to other health professionals or health services were most frequently given.

Q23: What percentage of customers do you regard as regular?

In PhARIA 2–6 pharmacies, 83% stated that more than 60% of their customers were regular, compared to 63.4% of PhARIA 1 pharmacies. Nearly one-third (578/1,888; 30.6%) of PhARIA 1 pharmacies said 30-60% of customers were regular compared to the much lower percentage, 13.7% (70/511), for rural and remote pharmacies. Overall, significantly more rural pharmacies regarded their customers as regulars compared to pharmacies in PhARIA 1 locations ($p<0.00$). See Table 6.7 below.

Table 6.7: Portion of regular pharmacy customers comparing PhARIA 1 to PhARIA 2–6

PhARIA/Regular Customers	Up to 30%	30-60%	>60%	Total
PhARIA 1	103 (5.4%)	578 (30.4%)	1,207 (63.4%)	1,888 (100%)
PhARIA 2–6	11 (2.2%)	70 (13.7%)	424 (83%)	511 (100%)

Q30: Main clinical and monitoring service provided by the pharmacy

The survey questions did not specifically define what each clinical and monitoring service investigated entailed; however, the report did go into more detail. Elsewhere in the report, more consumer investigations were then undertaken for diabetes and asthma services, but this detail was not requested. Pharmacist respondents were asked to nominate their main professional activity from the following: blood pressure, diabetes, nutrition, asthma, wound care, methadone, community education, complementary medicines or other. Community education and complementary medicines were only nominated by a total of three respondents in the sample as their major service, while no pharmacy nominated wound care or methadone services as their primary service (See Table 6.8).

Table 6.8: Relationship between PhARIA 1 and PhARIA 2–6 pharmacies providing monitoring and clinical services

Service/ Location	Blood pressure	Diabetes	Nutrition	Asthma	Written medication profiles	Number of pharmacies
PhARIA 1	901 (47.3%)	380 (20.0%)	380 (20.0%)	198 (10.4%)	43 (2.3%)	1,903 (100%)
PhARIA 2–6	263 (51.5%)	97 (19.0%)	70 (13.7%)	67 (13.1%)	13 (2.5%)	511 (100%)
Significance p value	0.35	0.73	0.01	0.14	0.84	

Percentage as a whole—2,414 pharmacies offering services.

Overall, while 47.3% of the total number of pharmacies in the study (2,414 which answered this question) which offered 'Blood Pressure', as it was termed, as their main clinical and monitoring service, were in PhARIA 1, 51.5% were in PhARIA 2–6 areas (Table 6.8 above). Marginally more PhARIA 2–6 pharmacies proportionally offered asthma services (PhARIA 1, 10.4%: PhARIA 2–6, 13.1%). Similar rates in both geographic areas occur for diabetes services (PhARIA 1, 20.0%: PhARIA 2–6, 19.0%),

and only a small number of pharmacies offered written medication profiles (PhARIA 1, 2.3%: PhARIA 2–6, 2.5%) as their main service. More pharmacies in PhARIA 1 offered nutrition services (PhARIA 1, 20%: PhARIA 2–6: 13.7%), the only marginally statistically significant difference ($p<0.01$).

6.3.3 Discussion similarities and differences for rural and urban pharmacies

In this study of the evaluation of the 3CPA QCPP, pharmacies were asked 31 questions about the pharmacy itself, its size and business, staff and services provided. Rural pharmacies did have a more regular customer base, as would be expected, with 83% of pharmacies stating over 60% of their customers were regular.

Pharmacists were asked if people sought health or lifestyle advice, and if customers were referred to, a GP, or the problem was resolved in the pharmacy, by the pharmacist or staff. More PhARIA 1 pharmacists solved problems that presented than rural pharmacists did. Pharmacists were also asked to indicate their main professional services from a range provided. Most pharmacies indicated blood pressure, diabetes, nutrition, asthma and written medication profiles as their main service from the list suggested. Very few suggested methadone, complementary medicine, wound care and community education as their main activity.

The results indicated there were no significant differences between rural and urban pharmacies in monitoring and clinical service provision except in one area, which was statistically significant. Nutrition services were considered the main activity in more PhARIA 1 pharmacies than PhARIA 2–6 pharmacies ($p<0.01$) but the result is weak.

However, there was no definition of 'nutrition' and it cannot be determined to what the difference actually related. As the pharmacy was not asked to define the detailed nature and components of, the service provided the following could occur to use a worst-case example. A weight management or nutrition service, could be interpreted as high vitamin or weight management product sales, or a more complex nutrition and wellness clinic conducted as an extended face-to-face counselling session within the pharmacy setting with the pharmacist.

There was a trend for rural pharmacies to supply more blood pressure and asthma

services, but with no statistical significance. This further analysis of the survey did not shed any more real light on differences between rural and urban services using the parameters explored. The report of this evaluation [210] indicated pharmacy size was a significant factor in pharmacy service provision, whether this be this in a urban or rural location.

Data from the following QCPP evaluation report for the 4CPA will also be analysed to look for any trends or changes in rural and urban practice, from a different perspective 5 years later. The following analysis used a large customer survey database of responses.

6.4 Fourth Community Pharmacy Agreement QCPP evaluation analysis

The 4CPA was signed on 16 November 2005 (nearly five months after the completion of the previous agreement) and ended on 30 June 2010 [70]. Again, an evaluation of the QCPP was undertaken as part of the ongoing assessment of the overall 4CPA program. In 2012, 92% of Australian pharmacies were QCPP accredited [213]. The following comparative analyses looked for differences between rural and urban pharmacies. It had not been conducted previously and was not a focus of the initial analysis undertaken by the survey provider. This analysis will address the research question for potential differences between rural and urban community pharmacy practice using these customer responses.

6.4.1. The consumer survey

The 2011 4CPA QCPP Pharmacy Patient Questionnaire (Appendix 6) section of the QCPP evaluation, was conducted by Client-Focused Evaluations Program (CFEP), in turn managed by the Focused Evaluations Program Company [211]. Staff gave out consumer surveys, and these either were completed immediately or could be left with the pharmacy, or returned by post, for analysis. Each participating pharmacy was initially sent 60 forms, and while some completed far more, others contributed far less (range 1–178). Analysis was conducted by CFEP. The de-identified data for this analysis was requested from CFEP with permission of the data owner, the PGA. The final survey data received from 921 pharmacies in 745 Australian postcode locations, with a total of 36,668 individual survey replies, contained the postcode only as a location identifier.

The results of questions relating to professional services, information and advice, supply, customer satisfaction and presence of a chronic illness were requested. The survey response final data was completed in July 2012, and made available for this analysis.

6.4.2 Method

The survey replies were sent as a Microsoft Excel© spread sheet and further de-identified by CFEP using codes for each pharmacy. Identification of the rurality ranking of each pharmacy was deduced using the Australian postcode provided, and compared to the PhARIA 2011–12 table [214] as this was the set closest in time, for the majority of survey replies.

The data required extensive refinement to allow comparison analysis. A Microsoft Access© database was developed to allow the conversion from postcode to PhARIA ranking. Pharmacies were divided into urban (PhARIA 1) and rural (PhARIA 2–6). From a total of 2,885 postcodes in Australia, pharmacies in 745 locations provided data for this QCPP Evaluation survey. Some postcodes did have more than one PhARIA ranking so an average within the postcode was used to allocate a PhARIA number using the method below. Anomalies also existed between the different coding systems (postcode and PhARIA ranking) such as the use of apostrophes, brackets, spaces and full stops, which had to be taken into account, and an adjustment made so this additional data could be included. For 23 postcodes, no PhARIA ranking existed and one was allocated using the surrounding areas as a guide. Of these, 22 postcodes were ranked PhARIA 1 as they were clearly urban, such as a city post-box postcode or inner major city locations. The last one was ranked PhARIA 3, by looking at surrounding postcodes. The data provided was not divided to investigate the information from each pharmacy, but grouped into rural and urban, so the two individual data sets could be analysed. This grouping allowed all data to be used, even those with a small number of responses per pharmacy.

Each postcode area in Australia can consist of a number of smaller towns or suburbs. Some postcodes relate well to the PhARIA system and all locations within that code will be e.g. PhARIA 1. However, for some areas, more than one PhARIA ranking exists. Using the Microsoft Access© database, analyses of all known PhARIA classifications for a particular postcode were taken into account, then averaged to provide an analysable

PhARIA ranking for each postcode provided. The assumption was made that if this average ranking for the suburbs and areas listed was more than PhARIA 1, the overall area was deemed to be rural, for this 4CPA QCPP analysis.

The CFEP Pharmacy Patient Questionnaire (Appendix 6) used a Likert response sequence coded as 0–blank (no response); 1–poor; 2–fair; 3–good; 4–very good; 5–excellent; and 6–don't know. It could be argued that this style of sequence would produce a biased positive response, as there was no 'neutral' as the usual central response option, with negative and positive response possibilities either side. There were also no sets of positive and negative questions as described by MacKeigan and Larson (1989) [215], to alleviate bias and confirm the answers were the consumer's intent.

As staff handed out the survey, the cohort selected might be construed as biased, but on the positive side, it could be more representative of regular pharmacy customers. This survey format has been widely used in pharmacy, and other health service areas in Australia, and also in the UK. In Australia, surveys were centrally analysed compared to the UK, where the pharmacy customer satisfaction surveys could be either collated by the pharmacy itself, or sent away for analysis. Trustworthiness could be questioned with this initial analysis method in both countries. However, under the requirements of QCPP, this is only one part of the extensive analysis of the QCPP system undertaken during each CPA.

The survey questions include those related to the pharmacy itself, the staff and other issues such as availability and information provided, as well as locality and demographic data. There was also an opportunity for free text suggestions for improvements within the pharmacy. Not all survey answers were requested for these analyses. Responses, which related to the access, appearance, comfort of surroundings, waiting times, greeting, respect shown, availability of products and opportunities for complaints, were not requested. The selection of data requested from the owners related to professional service provision, confidentiality and privacy, issues often mentioned in the rural literature. The following table shows the questions asked by the CFEP Pharmacy Patient Questionnaire and the abbreviations used in this chapter for further analysis.

Table 6.9: Questions of the 4CPA QCPP consumer survey

Question number	Survey question	Abbreviations used in text or tables
About the pharmacy		
6	Availability of privacy where you could speak without being overheard, if needed	Q6 Privacy
7	Extent to which your personal information is kept confidential by pharmacy staff	Q7 Confidentiality
About the pharmacy staff (whom you just saw)		
9	Overall satisfaction with my discussion with the staff was…	Q9 Satisfaction
11	On the visit I would rate the staff's ability to really listen to me as…	Q11 Availability
12	The staff's explanations of things to me were….	Q12 Explanations
13	The extent to which I trust this person is…	Q13 Trust
14	My confidence in this staff member's knowledge of medicine and health products is…	Q14 Knowledge
15	The opportunity the staff gave me to express my concerns or fears was…	Q15 Opportunity to express concerns
Other issues		
18	Information provided by the pharmacy about its services (e.g. prescriptions, leaflets, travel advice)	Q18 Service information
19	The information provided by this pharmacy about how to prevent illness and stay healthy (e.g. skin care, health risks of smoking, diet habits, etc.) was…	Q19 Preventative health information
Demographic data		
26	Is this your regular pharmacy?	Q26 Regular pharmacy
28	Do you have any chronic illness or disability that is likely to affect you over a long period of time?	Q28 Chronic illness

Two methods of data management were used to investigate any differences between urban and rural pharmacy survey responses. They were:

- Method A that combined all responses into rural and urban, and excluded those, which were 0–blank (no response) or designated as 6–don't know.
- Method B used a mean response per pharmacy, excluding those pharmacies with less than 10 responses and excluded those, which were 0–blank (no response) or

designated as 6–don't know.

6.4.3 Results

This analysis was undertaken using Microsoft Access© and IBM SPSS Statistics 20–24© (Armonk, NY: IBM Corp.) to group the data and then allow for statistical analysis. The following results in the tables below explored if there were any possible statistical differences existed between urban and rural survey respondent groups.

Overall, 69 pharmacies had less than 10 responses each, for a total of 243 survey responses, only 0.06%, of the total of 36,668 responses received. Of these 69 pharmacies, 54 (54/921; 5.9% of the whole pharmacy cohort) were in PhARIA 1, and 15 (15/921; 1.6% of the whole pharmacy cohort) were in PhARIA 2–6, a lower ratio of urban to rural than for the rest of the database, but a small subset overall. Responses per pharmacy ranged from 1 to 118 with the mean number of responses being 40.2.

It can be seen that there were no statistical differences between the two groups of respondents in urban or rural areas of Australia, with either method, except for one question. The only area in which respondents differed was in the pharmacist's knowledge, which was considered greater in rural areas but this difference was very small in absolute terms and not a strong statistical difference ($T(765)=1.98$, $p<0.05$). Consumers considered all pharmacies provided a private area if required, and confidentiality, was maintained. Respondents were satisfied with the pharmacy. They trusted the pharmacist and staff, and the pharmacist was available if needed. Pharmacists provided adequate explanations about medicines, preventative health and service information, and there was opportunity to express concerns or make complaints. Ratings overall were in the 'very good' to 'excellent' range, except for the availability of a private area in the pharmacy, which was ranked as 'good' to 'very good'.

Table 6.10: 4CPA Comparison of two methods for analysis of survey responses

Question	Method of analysis	Urban pharmacy responses		Rural pharmacy responses		Significance
		Mean and Standard Deviation[1]	No response/ Don't know[2]	Mean and Standard Deviation[1]	No response/ Don't know[2]	
Q6 Privacy	A	3.72±0.36	8.2% (7.0% Don't Know[2])	3.73±0.40	7.3% (6.1% Don't Know[2])	T (765)=0.11, p=0.91
	B	3.73±1.11		3.74±1.12		
Q7 Confidentiality	A	4.4 ±0.21	13.1% (11.2% Don't Know)	4.47±0.20	10.7% (9.3% Don't Know)	T (765)=0.69, p=0.49
	B	4.48±0.73		4.47±0.76		
Q9 Satisfaction	A	4.54±0.20	0.8%	4.54±0.19	0.9%	T (765)=0.81, p=0.42
	B	4.55±0.67		4.54±0.67		
Q11 Availability	A	4.56±0.21	2.0%	4.56±0.19	1.4%	T (765)=0.31, p=0.76
	B	4.55±0.67		4.55±0.67		
Q12 Explanations	A	4.52±0.68	2.7%	4.52±0.68	2.0%	T (765)=0.16, p=0.88
	B	4.52±0.20		4.52±0.19		
Q13 Trust	A	4.50±0.70	3.2%	4.49±0.71	2.6%	T (765)=0.88, p=0.38
	B	4.51±0.23		4.49±0.21		
Q14 Knowledge	A	4.51±0.69	4.4%	4.48±0.71	3.6%	T (765)=1.98 p=0.048
	B	4.51±0.22		4.48±0.20		
Q15 Opportunity to express concerns	A	4.54±0.72	9.3% (7.0% Don't Know)	4.44±0.73	8.1% (5.6% Don't Know)	T (765)=0.88, p=0.39
	B	4.45±0.22		4.32±0.21		
Q18 Service information	A	4.42±0.74	5.7%	4.43±0.73	4.2%	T (765)=1.02, p=0.31
	B	4.42±0.22		4.43±0.21		
Q19 Preventative health information	A	4.20 ± 0.80	14.3% (11.5% Don't Know)	4.21±0.78	11.1% (8.4% Don't Know)	T (765)=0.57, p=0.57
	B	4.19±0.24		4.20±0.23		

[1] Likert Items: 1–poor; 2–fair; 3–good; 4–very good; 5–excellent.

[2] Likert Items 0–blank (no response); 6–don't know.

Method A: Urban and rural results excluding 0–blank (no response) and 6–don't know.

Method B: Urban-rural and rural results using a mean response per pharmacy, excluding 0–blank (no response) and 6–don't know.

In Table 6.11 below, to further investigate the data, two of the questions analysed requested a yes/no response and a Chi-squared analysis was conducted. Excluded were those responses, which were blank (no response) and were coded as 0. Rural respondents were slightly more likely to have a regular pharmacy (X^2 (1, n=28,831)=99.37, p<0.00) but were as likely as urban respondents to have a chronic illness as shown in Table 6.11 below.

Table 6.11: 4CPA Comparison of rural and urban pharmacy: Regular pharmacy and chronic illness

	Urban pharmacy responses	Rural pharmacy responses	Chi-sq.
Q26 Regular pharmacy			
yes	19,715 (91.2%)	4,302 (95.5%)	**X^2 (1, n=28,831)=99.37, p<0.00**
no	1,899 (8.8%)	205 (4.6%)	
Total response	**21,614**	**4,507**	
Q26 No response	1,899	318	
Total no missing responses	**2,217**		**Total responses: 23,831**
Q28 Chronic illness			
yes	11,766 (53.5%)	2,434 (53.3%)	**X^2 (1, n=34,387)=0.00, p=0.99**
no	10,223 (46.5%)	2,130 (46.7%)	
Total response	**21,989**	**4,564**	
Q28 no response	1,494	261	
Total no responses	**1,755**		**Total responses: 28,308**

6.4.4 Discussion similarities and differences for rural and urban pharmacies

This 4CPA QCPP Pharmacy Patient Questionnaire data indicated little difference in opinion between rural and urban pharmacy respondents. It was conducted later (2010–1) than the previous 3CPA pharmacy surveys (2003, 2005) where again, little

differences were shown in service provision by the pharmacies.

CPA funding of rural pharmacy programs has occurred in differing formats over the past few agreements. This support can allow rural pharmacies, now only those in an area rated PhARIA 2 and above to survive and thus support professional program development [79]. However, this did not appear to lead to any difference in service provision between rural and urban pharmacies.

This extensive survey (36,668 respondents) was designed as a quick survey to ensure it was easy for consumers to fill in, and thus achieve a high response rate. There was a good rural response. It also could be argued that these surveys could be biased, as they are not random at all.

They were:

- given to existing pharmacy consumers
- handed to those consumers more likely to fill them in
- given to those who go to pharmacies frequently
- worded to invite a positive response

Consumers were not asked about services they would like in a pharmacy. No additional questions were asked in reverse, to negate bias or incorrect answers. An example of this potential bias could explain the lack of difference in the proportion of regular customers found in rural pharmacies, as compared to urban pharmacies, found in the previous 3CPA evaluation.

The Pharmacy Cardiovascular Health Care Model (PCHCM) [216], which will be further analysed in Chapter 7, used a random telephone call for consumer data, in comparison to both the 3CPA and 4CPA QCPP evaluation surveys. The PCHCM model was looking for opportunities for service change to pharmacy practice from respondents who may or may not regularly frequent a pharmacy.

The surveys in this chapter investigated views of existing customers, pharmacists and staff. Nevertheless, the numbers of responses achieved are substantial and did show consumers valued their particular pharmacy. It would be expected that those living in rural areas would have a regular pharmacy, more so than those living in urban areas. This could be because there is only one option for a pharmacy nearby. However, this

could also imply that respondents prefer a local pharmacy to distant online services.

The 3CPA and 4CPA surveys did provide valuable data for the pharmacy profession and the individual pharmacies, to thus change and refine their practice, to ensure customer satisfaction. Service provision and private consultation areas may be available, but they were obviously not evident in the pharmacy, so this 4CPA survey did show improvements should be made in practice. Half way through the survey process, the QCPP newsletter(Aug-Sept 2011) [95] promoted that 100% of 18,140 (49.5% of the overall final data set) respondents rated their pharmacy as 'good' or excellent'. For some, pharmacy practice being merely 'good' may be interpreted as inadequate, and 'excellent' is the only acceptable response for the business.

Existing rural pharmacy practice and urban pharmacy practice were similar in responses in the 4CPA patient response survey, and no substantial results were found apart from rural pharmacists having more knowledge, but this was a marginal statistically significant result.

6.5 Limitations

Limitations of this data include the variety of pharmacy data sources, age of the various data examined, various coding systems for rurality, which had to be modified, and the nature of the brief surveys used for the 3CPA and 4CPA QCPP analyses.

Data was obtained from evaluations of the 3CPA (2003) Pharmacist and Pharmacy Censuses, and 4CPA (2010–1) CPEP Pharmacy Patient Questionnaires. The 3CPA model used the PhARIA ranking of the time. The 4CPA data used postcodes as an indicator or rurality, which required modification. To preserve pharmacy anonymity data was requested from the owner of the data in this form, which then required coding into the appropriate PhARIA ranking. The surveys overall were from different times using different PhARIA ratings, but the PhARIA rating was appropriate for the time of the survey. Some errors could have occurred using the coding assumptions explained previously.

The first 3CPA QCPP survey did investigate professional services provided by the pharmacy compared to the 4CPA QCPP surveys, which examined consumer satisfaction with current pharmacy services using opportunistic consumers.

6.6 Summary

Overall, there was little difference found between rural and urban pharmacy services. Rural pharmacies appeared to have a higher proportion of regular customers in the QCPP 3CPA second survey, compared to urban pharmacies.

In the QCPP 3CPA second survey there were more nutrition services in urban areas, but this service without the benefit of details, could be argued as ambiguous and not well defined. There were no significant differences for the level of provision of other professional services.

The pharmacy staff selected customers for the QCPP 4CPA surveys, and bias could have been introduced. Yet, this data is quoted as showing the benefit of community pharmacy in pharmacy literature [95], and was replicated in popular pharmacy literature again at the time. Rural pharmacies had a slightly higher proportion of regular customers, but the absolute difference was very small, suggesting that the survey was given to regular customers biased the result.

The following chapter will investigate two more surveys, the Pharmacy Cardiovascular Care Model Project (PCHCM) consumer survey previously mentioned and a pharmacist practitioner survey, conducted to look for any differences in practice, between rural and urban community pharmacists and pharmacies.

Chapter 7: Current, potential and future community pharmacy practice comparison using consumer and practitioner surveys

The first section of this chapter, will provide an analysis of consumer expectations for cardiovascular screening and monitoring community pharmacy services, using data from the PCHCM [216] developed in 2005. Differences in opinion will be investigated, from the rural and urban consumers questioned, using data previously unanalysed with this as a focus.

The second section will show the results of the Current and Future Pharmacy Practice Survey (2014), in which pharmacist respondents gave their opinions on current or future practice services, such as vaccination and disease state management. They were also asked about their views on their current, future and most probable future pharmacy practice roles, suggestions about the 6CPA and the state of the profession itself. This analysis explored opinion differences between rural and urban practitioners.

The results will then be discussed to show similarities and differences in consumer expectations and the practitioners' views of community pharmacy practice and services. These investigations are not without limitations, because of the age of some of the survey data, methods used to determine specific rurality locations and the overall number of pharmacist respondents in the second survey. However, the age of the data also provides a valuable understanding of practice changes and opinions over time.

7.1 Aims of study

The aims of these analyses in Chapter 7 were to:

- compare consumer expectations of community pharmacy and the services that could be offered, and analyse the data for differences between rural and urban areas of practice
- compare pharmacist opinions and expectations of their current and future practice, and analyse the data for differences between rural and urban practitioners.

7.2 Sources of data

The data for analysis were from two project surveys, the PCHCM undertaken in 2005

[216], and the Current and Future Pharmacy Practice Survey, which was distributed and completed in 2014.

Two different classifications systems for defining rural were used in these projects. The PCHCM project [216] used the general location given by the consumer, postcode and the ARIA system to define geographic location, while the Current and Future Pharmacy Practice survey used a combination of PhARIA, postcode and suburb to accurately assign a correct PhARIA geographical ranking for each respondent. Some data was reclassified [16, 212], for both projects, to enable a comparison using a two-fold rural/urban division, similar to that previously used elsewhere in this thesis.

Each project will be described in more detail, followed by analysis and conclusions drawn, before an overall chapter summary is provided.

7.3 The Pharmacy Cardiovascular Health Care Model consumer survey

The PCHCM, was a project undertaken by the University of Tasmania School of Pharmacy, Monash University School of Pharmacy and the Curtin University School of Pharmacy in 2005, as a 3CPA funded research project [216]. For this project, a cardiovascular health care model was developed for community pharmacy, which included components of public and preventative health promotion awareness raising, continuum of care transfer and follow-up, high-risk patient screening and referral, compliance with therapy and both medication management and review [216], as well as an extensive consumer telephone survey.

7.3.1 The Consumer public survey

Using this telephone survey data, the consumer perceptions and expectations of the roles and activities of pharmacists and pharmacies, were analysed and compared. Although the complete set of data was analysed and reported for the project itself, an analysis of any differences in views of urban and rural consumers was not undertaken or published at the time. The opinions of consumers, on service provision, perceptions and expectations of pharmacists and other health practitioners, were further explored.

The potential and current professional services investigated were:

- providing screening or testing for raised blood pressure

- testing or screening for diabetes
- testing for raised cholesterol
- diagnosing cardiovascular diseases
- providing advice on lifestyle changes (weight loss, smoking, alcohol intake etc.)
- prescribing drug treatment for cardiovascular diseases
- supplying medicines for cardiovascular diseases
- providing advice on over-the-counter and herbal medicines to be avoided by patients with a cardiovascular disease
- providing information about cardiovascular diseases and their management
- providing advice on how to take medicines properly
- checking or monitoring the outcomes of drug treatment

7.3.2 Method

In 2005 [171, 216], 505 consumer interviews were conducted by telephone. A formatted copy of the survey transcript is provided in Appendix 7. The survey participants were:

- those over 30 years of age
- only those who had visited a pharmacy in the previous month

In addition, the survey required quotas of 50% of consumers who:

- had cardiovascular disease
- did not have cardiovascular disease (this included those with family members with cardiovascular disease)

Using a computer-assisted telephone interview (CATI) system from 8,874 calls, 505 households that met the criteria and were successfully contacted for the 15-minute interview. Phone numbers were randomly chosen from the Electronic White Pages©, and a number of call-backs were made for contact. The CATI system included consumers from urban and rural areas, reflecting the Australian population distribution of the time, and consumers rung were from all states and territories.

Respondents were aged from 30 years to 90 years, with a mean of 57 years. Approximately half (58%) were female. Half the respondents interviewed also worked part-time or full-time. Two-thirds (69%) had an ongoing illness which required medication, with 33% living with hypertension, 19% dyslipidaemia and 9% diabetes

[216].

The project asked respondents for their knowledge, and opinions of various services that were, or could be, provided by a pharmacist, doctor, nurse, dietician or naturopath. It also asked respondents about their likelihood of patronising these services, if available. The following results will give an analysis, using SPSS 20–24© (Armonk, NY: IBM Corp.), of the rural and urban consumer responses in relation to pharmacist services.

7.3.3 Results

The original published analysis looked at the results as a whole, and did not differentiate between rural and urban consumer respondents. This additional analysis was conducted to see if any differences existed in the consumer opinions of these sub-groups.

This survey used the ARIA system of population classification to define geographic locations of participants. Postcodes were also provided as part of the survey, and in addition, the consumer gave a broad area answer to their location, described either as 'capital city' or 'the rest of the state or territory' in which they lived. A combination of postcode and ARIA classification, and not necessarily the consumer's initial answer of their location, was used for an accurate geographical ranking. Using the ASGC and ARIA classification appropriate to the time the survey was undertaken, in 2005, the data was classified into the ASGC regions of Major City, while the other areas were combined for analysis (Inner Regional, Outer Regional, Remote and Very Remote) [16, 212]. This geographic separation was made to allow a comparison to other data in this thesis, which used the pharmacy version of this classification system (PhARIA). It should be noted that many ASGC Inner Regional centres were classified as PhARIA 1, the highest classification possible, and would therefore be categorized as urban if the PhARIA system, was used at the time. For this analysis, however, Inner Regional areas have been added to the non-major city group as some were classified PhARIA 2 (Chapter 2). Postcodes were used to confirm the classifications.

Using the information provided, this additional analysis of the data showed that there were 179 respondents from a total of 505, who could be classified as living in regional or rural areas of Australia. The project report cited 189 regional respondents, and 316

urban respondents, but upon checking the data, this was changed to 179 regional and 326 urban consumers.

The respondents were asked a wide range of questions about their satisfaction and knowledge of their pharmacy, the capability of the pharmacy to provide certain services, and the likelihood of using these services if provided. Looking for any rural and urban differences, the following results were found.

Q3–4: Customer satisfaction, ongoing illness

As shown in Table 7.1, in rural areas, only 0.6% (1/179) of consumers were dissatisfied with their pharmacy and a similar percentage (1.2%; 4/326) was found for those in metropolitan areas. However, overall 96.6% (488/505) were satisfied with their pharmacy service, with no apparent difference between geographical regions.

Table 7.1: PCHCM customer satisfaction with pharmacy services

Satisfaction with pharmacy services	Very dissatisfied/ dissatisfied	Neither satisfied nor dissatisfied	Satisfied/ very satisfied
Major city (n=326)	1.2% (4)	2.1% (7)	96.6% (315)
Inner Regional/Outer Regional, Remote and Very Remote Australia (n=179)	0.6% (1)	2.8% (5)	96.6% (173)
Total (n=505)	1.0% (5)	2.4% (12)	96.6% (488)

Participants were asked if they had an ongoing condition or illness requiring medication (Q4) (Appendix 7). This data was cross-referenced with pharmacy satisfaction, but again there was little difference in opinion for these subgroups in rural and urban areas as shown in Table 7.2 below.

Table 7.2: Satisfaction with pharmacy for those with any chronic disease requiring medication

Satisfaction with pharmacy services	Any chronic illness requiring medication	Very dissatisfied/ dissatisfied	Neither satisfied nor dissatisfied	Satisfied/ very satisfied
Major city (n=326)	Yes (n=228)	1.8% (4)	1.8% (4)	96.5% (220)
	No (n=98)	0% (0)	3.1% (3)	96.9% (95)
Inner regional/outer regional, remote and very remote Australia (n=179)	Yes (n=121)	0.8% (1)	2.5% (3)	96.7% (117)
	No (n=58)	0% (0)	3.4% (2)	96.6% (56)
Total (n=505)		1.0% (5)	2.4% (12)	96.6% (488)

Using data from the consumers with CVD-related conditions only, again, little difference and no statistical significance was found, using a Chi-square test, between those from rural and urban areas, as can be seen in Table 7.3 below.

Table 7.3: Satisfaction with pharmacy for those with CVD

Satisfaction with pharmacy services		Very dissatisfied/ dissatisfied	Neither satisfied or dissatisfied	Satisfied/ very satisfied	Chi-sq.
No CVD (n=254)	**Urban (n=158)**	0.6% (1)	2.5% (4)	96.8% (153)	0.710
	Rural (n=96)	0.0% (0)	3.1% (3)	96.9% (93)	
CVD (n=251)	**Urban (n=168)**	1.8% (3)	1.8% (3)	96.4% (162)	0.893
	Rural (n=83)	1.2% (1)	2.4% (2)	96.4% (80)	

Q7: Customer knowledge of pharmacy professional services currently provided

Participants were asked about their knowledge of any CVD-related services provided by their pharmacy. Twenty participants did not provide an answer to this question, leaving a total cohort of 485, as could be seen in Table 7.4 below.

Approximately one-third of participants equally knew that their pharmacy offered, did not offer or did not know if their pharmacy offered blood pressure testing. More consumers without CVD knew their pharmacy had this service, but there was no difference between rural and urban consumers' knowledge of the service, if they had CVD. Slightly more rural consumers without CVD, did not know if the pharmacy had this service (33.7%: 28%), but there was no statistically significant difference.

Cholesterol screening was a service, which only one-fifth of respondents knew was available in their pharmacy. Most said 'no' or 'don't know'. Fewer urban consumers with CVD knew if their pharmacy had this service, compared to other groups. Again, there was no statistical significance.

Knowledge for blood sugar testing was more even across the categories, without any statistical significance for those with or without CVD, and for those living in rural areas.

Table 7.4: Knowledge of professional services provided by the customer's pharmacy

Knowledge of pharmacy services		Yes	No	Don't know	Chi-sq.
Q35 Pharmacy services offered—BP screening and testing					
No CVD (n=241)	**Urban (n=149)**	22.1% (33)	35.6% (53)	42.3% (63)	0.318
	Rural (n=92)	29.3% (27)	37.0% (34)	33.7% (31)	
CVD (n=244)	**Urban (n=158)**	32.1% (52)	35.8% (58)	32.1% (52)	0.796
	Rural (n=82)	32.9% (27)	39.0% (32)	28.0% (23)	
	All (n=485)	28.7% (139)	36.5% (177)	34.8% (169)	
Q35 Pharmacy services offered—Cholesterol screening and testing					
No CVD (n=241)	**Urban (n=149)**	18.8% (28)	37.6% (56)	43.6% (65)	0.518
	Rural (n=92)	25.0% (23)	34.8% (32)	40.2% (37)	
CVD (n=244)	**Urban (n=158)**	17.3% (28)	37.7% (61)	45.1% (73)	0.248
	Rural (n=82)	14.6% (12)	48.8% (40)	36.6% (30)	
	All (n=485)	18.8% (91)	39.0% (189)	42.3% (205)	
Q35 Pharmacy services offered—Blood sugar screening and testing					
No CVD (n=241)	**Urban (n=158)**	25.5% (38)	32.2% (48)	42.3% (63)	0.992
	Rural (n=96)	26.1% (24)	31.5% (29)	42.4% (39)	
CVD (n=244)	**Urban (n=168)**	27.2% (44)	34.0% (55)	38.9% (63)	0.220
	Rural (n=83)	24.4% (20)	45.1% (37)	30.5% (25)	
	All (n=485)	26.0% (126)	34.8% (169)	39.2% (190)	

Q8–18: Consumer opinions of pharmacy capability of providing professional services

Participants were asked their opinion about the capability of a pharmacy to provide a variety of screening and/or monitoring services (Table 7.5). Data for those with CVD or without CVD, in rural or urban areas, was investigated further.

Of the total number of completed surveys (505), the PCHCM final report stated that 52.1% (263/505) agreed or strongly agreed that pharmacists were capable of providing screening or testing for raised blood pressure, blood sugar testing—50.7% (256/505), and only 36.6% (185/505) of pharmacists were capable of providing screening for raised cholesterol. Only 20.8% (105/505) agreed that pharmacists would be capable of prescribing for CVD but 80% (404/505) felt pharmacists could provide lifestyle advice (in the areas of weight loss, smoking or alcohol consumption) and 70.5% (356/505) could provide advice about herbal and OTC drug interactions.

The Likert scale answers for this section were compressed into three groups as seen below, and data analysed for urban/rural differences. The results below show a high proportion of consumers who neither agree nor disagree with this option. The only statistically significant result was the capability of the pharmacy to provide a blood pressure service. Those consumers in rural areas with CVD thought their pharmacy was more capable of providing a blood pressure service ($p<0.00$) than those consumers with CVD living in urban areas.

Table 7.5: Capability of a pharmacy providing CVD related professional services

Capability of a pharmacy providing CVD Services		Strongly disagree/ disagree	Neither agree or disagree	Agree/ strongly agree	Chi-sq.
Q8 Pharmacist capability of providing a BP service					
No CVD (n=254)	**Urban (n=158)**	29.7% (47)	21.5% (34)	48.7% (77)	0.13
	Rural (n=96)	18.8% (18)	21.9% (21)	59.4% (57)	
CVD (n=251)	**Urban (n=168)**	19.2% (55)	23.2% (39)	44.0% (74)	0.00
	Rural (n=83)	19.3% (16)	14.5% 12)	66.3% (55)	
Q9 Pharmacist capability of providing a blood sugar testing service					

Capability of a pharmacy providing CVD Services		Strongly disagree/ disagree	Neither agree or disagree	Agree/ strongly agree	Chi-sq.
No CVD (n=254)	**Urban (n=158)**	24.1% (38)	25.9% (41)	50.0% (79)	0.53
	Rural (n=96)	20.8% (20)	21.9% (21)	57.3% (55)	
CVD (n=251)	**Urban (n=168)**	29.8% (50)	26.8% (45)	43.5% (73)	0.06
	Rural (n=83)	22.9% (19)	18.1% (15)	59.0% (49)	
Q10 Pharmacist capability of providing a cholesterol monitoring service					
No CVD (n=254)	**Urban (n=158)**	41.1% (65)	18.4% (29)	40.5% (64)	0.23
	Rural (n=96)	32.3% (31)	26.0% (25)	41.7% (40)	
CVD (n=251)	**Urban (n=168)**	44.0% (74)	25.0% (42)	31.0% (52)	0.13
	Rural (n=83)	31.3% (26)	33.7% (28)	34.9% (29)	
Q12 Pharmacist capability of providing lifestyle information					
No CVD (n=254)	**Urban (n=158)**	14.6% (23)	12.7% (20)	72.8% (115)	0.84
	Rural (n=96)	12.5% (12)	11.5% (11)	76.0% (73)	
CVD (n=251)	**Urban (n=168)**	11.9% (20)	8.9% (15)	79.2% (133)	0.73
	Rural (83)	14.5% (12)	10.8% (9)	74.7% (83)	
Q13 Pharmacist capability of prescribing medication for CVD					
No CVD (n=254)	**Urban (n=158)**	63.3% (100)	15.2% (24)	21.5% (34)	0.73
	Rural (n=96)	58.3% (56)	17.7% (17)	24.0% (23)	
CVD (n=251)	**Urban (n=168)**	71.4% (120)	14.3% (24)	14.3% (24)	0.10
	Rural (n=83)	69.9% (58)	14.5% (12)	15.7% (24)	
Q15 Pharmacist capability of providing OTC and herbal drug interaction advice for CVD					
No CVD (n-254)	**Urban (n=158)**	12.0% (19)	17.7% (28)	70.3% (111)	0.73
	Rural (n=96)	14.6% (14)	19.8% (19)	65.6% (63)	
CVD (n=251)	**Urban (n=168)**	12.5% (21)	14.3% (24)	71.8% (123)	0.90
	Rural (n=83)	14.5% (12)	14.5% (12)	71.1% (59)	

Q19–19: Likelihood of consumers using pharmacy professional services provided

Although 97% of consumer respondents would use a testing or screening service for blood pressure if provided by doctors, and 73% would use if this were provided by nurses, only 59% were likely to use this service if provided by pharmacists. However, concerning a medication information service, 90% would ask a doctor, 90% a pharmacist and only 61% would ask a nurse.

The data on the likelihood of customers using the services listed in Table 7.6 below, if provided by a pharmacy, was further investigated to see if those with, or without CVD, would make more use of this service. Statistically significant results for rural consumers were found for only two of the services. Rural customers with CVD were less likely to use the following services, while urban consumers would go to a pharmacist to receive advice on lifestyle changes ($p<0.00$) or supply of medications ($p<0.00$). Rural consumers with CVD were more ambivalent about patronising a pharmacist-delivered lifestyle service compared to those from urban areas.

There were no statistically significant results for customers using services related to hypertension, diabetes, cholesterol monitoring, CVD diagnosis, prescribing, advice on OTC or herbal medicines drug interactions, CVD information, medication advice or drug monitoring. The table below does show that there were still many consumers who would not patronise these services if offered in a pharmacy, and many who were ambivalent.

Table 7.6: Likelihood of using professional pharmacy CVD related services

Likelihood of using a pharmacy providing CVD services		Strongly disagree/ disagree	Neither agree or disagree	Agree/ strongly agree	Chi-sq.
Q19 Likelihood of using a pharmacist hypertension service					
No CVD (n=254)	**Urban (n=158)**	30.4% (48)	8.9% (14)	60.8% (96)	0.42
	Rural (n=96)	25.0% (24)	6.3% (6)	68.8% (66)	
CVD (n=251)	**Urban (n=168)**	40.5% (68)	10.7% (18)	48.8% (82)	0.12
	Rural (n=83)	28.9% (24)	8.4% (7)	62.7% (52)	
	Total (n=505)	32.5% (164)	8.9% (45)	58.6% (296)	

Likelihood of using a pharmacy providing CVD services		Strongly disagree/ disagree	Neither agree or disagree	Agree/ strongly agree	Chi-sq.
Q20 Likelihood of using a pharmacist diabetes service					
No CVD (n=254)	**Urban (n=158)**	27.2% (43)	11.4% (18)	61.4% (97)	0.07
	Rural (n=96)	29.2% (28)	3.1% (3)	67.7% (65)	
CVD (n=251)	**Urban (n=168)**	39.3% (66)	8.3% (14)	52.4% (88)	0.39
	Rural (n=83)	31.3% (26)	7.2% (6)	61.4% (51)	
	Total (n=505)	32.3% (163)	8.1% (41)	59.6% (301)	
Q21 Likelihood of using a pharmacist cholesterol service					
No CVD (n=254)	**Urban (n=158)**	32.9% (52)	10.1% (16)	57.0% (90)	0.76
	Rural (n=96)	30.2% (29)	8.3% (8)	61.5% (59)	
CVD (n=251)	**Urban (n=168)**	44.6% (75)	11.9% (20)	43.5% (73)	0.52
	Rural (n=83)	47.0% (39)	7.2% (6)	45.8% (38)	
	Total (n=505)	38.6% (195)	9.9% (50)	51.5% (260)	
Q22 Likelihood of using a pharmacist CVD diagnosis service					
No CVD (n=254)	**Urban (n=158)**	50.6% (80)	13.3% (21)	36.1% (57)	0.10
	Rural (n=96)	50.0% (48)	13.5% (13)	36.5% (35)	
CVD (n=251)	**Urban (n=168)**	63.1% (106)	11.9% (20)	25.0% (42)	0.86
	Rural (n=83)	63.9% (53)	9.6% (8)	26.5% (22)	
	Total (n=505)	56.8% (287)	12.3% (62)	30.9% (156)	
Q23 Likelihood of using a pharmacist for lifestyle changes					
No CVD (n=254)	**Urban (n=158)**	21.5% (34)	8.9% (14)	69.6% (110)	0.08
	Rural (n=96)	15.6% (15)	3.1% (3)	81.3% (78)	
CVD (n=251)	**Urban (n=168)**	32.7% (55)	1.2% (2)	66.1% (111)	0.00
	Rural (83)	24.1% (20)	9.6% (8)	66.3% (55)	
	Total (n=505)	24.6% (124)	5.3% (27)	70.0% (354)	
Q24 Likelihood of using a pharmacist prescribing service					
No CVD (n=254)	**Urban (n=158)**	41.8% (66)	13.3% (21)	44.9% (71)	0.52

Likelihood of using a pharmacy providing CVD services		Strongly disagree/ disagree	Neither agree or disagree	Agree/ strongly agree	Chi-sq.
	Rural (n=96)	39.6% (38)	9.4% (9)	51.0% (49)	
CVD (n=251)	**Urban (n=168)**	58.9% (99)	7.7% (13)	33.3% (56)	0.27
	Rural (n=83)	48.2% (40)	9.6% (8)	42.2% (35)	
	Total (n=505)	48.1% (243)	10.1% (51)	41.8% (211)	
Q25 Likelihood of using a pharmacist for supplying medicine					
No CVD (n=254)	**Urban (n=158)**	22.2% (35)	8.2% (13)	69.6% (110)	0.09
	Rural (n=96)	15.6% (15)	3.1% (3)	81.3% (78)	
CVD (n=251)	**Urban (n=168)**	32.7% (55)	1.2% (2)	66.1% (111)	0.00
	Rural (n=83)	24.1% (20)	9.6% (8)	66.3% (55)	
	Total (n=505)	24.8% (125)	5.1% (26)	70.0% (354)	
Q26 Likelihood of using a pharmacist for OTC or herbal medicines drug interactions for CVD					
No CVD (n=254)	**Urban (n=158)**	15.8% (25)	17.1% (27)	67.1% (106)	0.15
	Rural (n=96)	17.7% (17)	8.3% (8)	74.0% (71)	
CVD (n=251)	**Urban (n=168)**	34.5% (58)	8.3% (14)	57.1% (96)	0.38
	Rural (n=83)	27.7% (23)	6.0% (5)	66.3% (55)	
	Total (n=505)	24.4% (123)	10.7% (54)	65.0% (328)	
Q27 Likelihood of using a pharmacist for CVD information					
No CVD (n=254)	**Urban (n=158)**	28.5% (45)	17.1% (27)	54.4% (86)	0.17
	Rural (n=96)	24.0% (23)	10.4% (10)	65.6% (63)	
CVD (n=251)	**Urban (n=168)**	45.2% (76)	11.9% (20)	42.9% (72)	0.80
	Rural (n=83)	49.4% (41)	12.0% (10)	38.6% (32)	
	Total (n=505)	36.6% (185)	13.3% (67)	50.0% (253)	
Q28 Likelihood of using a pharmacist for medication advice					
No CVD (n=254)	**Urban (n=158)**	6.3% (10)	7.0% (11)	86.7% (137)	0.10
	Rural (n=96)	6.3% (6)	1.0% (1)	92.7% (89)	
CVD (n=251)	**Urban (n=168)**	8.9% (15)	1.2% (2)	89.9% (151)	0.60

Likelihood of using a pharmacy providing CVD services		Strongly disagree/ disagree	Neither agree or disagree	Agree/ strongly agree	Chi-sq.
	Rural (n=83)	9.6% (8)	0.0% (0)	90.4% (75)	
	Total (n=505)	7.7% (39)	2.8% (14)	89.5% (452)	
Q29 Likelihood of using a pharmacist for drug monitoring					
No CVD (n=254)	**Urban (n=158)**	31.0% (49)	17.1% (27)	51.9% (82)	0.21
	Rural (n=96)	31.3% (30)	9.4% (9)	59.4% (57)	
CVD (n=251)	**Urban (n=168)**	47.6% (80)	7.1% (12)	45.2% (76)	0.14
	Rural (n=83)	34.9% (29)	10.8% (9)	54.2% (45)	
	Total (n=505)	37.2% (188)	11.3% (57)	51.5% (260)	

7.3.4 Consumer survey discussion

Pharmacists are capable of providing many professional services, but the public may not be aware of the depth and extent of the services, which could be provided, such as screening, monitoring and education for chronic disease, in addition to the conventional roles of dispensing and medication advice. In 2005 a public survey, as part of the PCHCM project, was undertaken to gauge the public knowledge and opinion of the current and potential roles that could be undertaken by pharmacists. This data was then further analysed to ascertain if consumers in rural areas had differing expectations for the services provided by pharmacists.

Nomenclature and explanations as to the nature of these professional services differ in the literature. The PCHCM project used a loose description to explain different professional services such as a 'providing a raised blood pressure screening or testing service' to consumers, potentially those with low health literacy. In comparison, The National Database Project (2003) used the term 'Enhanced Pharmacy Services' (EPS) [40] to describe many professional services. They used the term 'hypertension service' without any precise definition of the service itself in the survey document. Other researchers have used the term 'public health' or aspects of pharmaceutical care to describe similar activities [185, 186, 188]. The list of such services from the Australian National Pharmacy Database, developed by Berbatis et al. (2003) [40], was also used as a question for the key opinion leaders and the pharmacist PAART participant

interviews, in Chapters 4 and 5 of this thesis. None of the studies mentioned above used a concise definition and described in detail the nature of the service provided.

The National Database Survey (2003) [40] was conducted with data from 1,131 pharmacies across Australia. Respondents were from the pharmacy itself with either the owner, manager or pharmacist available providing data. In 2002, 13.3% of pharmacies offered with trained staff, a 'hypertension' service but 44.7% did not (11.8% missing cases); 4.5% offered a 'hyperlipidaemia' service but 67.3% did not (4.8% missing cases) and 17.2% offered 'diabetes' services, 41.7% did not (10.1% missing cases). These were some of the services listed in EPS table, used also in the key opinion leader and PAART pharmacist interviews (Appendix 2).

Comparison between all pharmacist respondents in the National Pharmacy Database survey and all PCHCM consumer respondents showed the following differences in consumer and pharmacist knowledge of the services available within the pharmacy. Assuming the interpretation of the professional service provided was similar to both pharmacist and consumers, and acknowledging the PCHCM project was 2 years later than the National Pharmacy database, clearly the public assumed more services were available in pharmacies at the time. Without specific definitions and activities of each service provided, this is difficult to confirm.

Table 7.7: Comparison of knowledge of pharmacy services: National Pharmacy Database pharmacist survey and PCHCM consumer survey

Services provided by pharmacies	National Pharmacy Database project 2003: pharmacist responses		PCHCM project 2005: consumer responses
	Service provided with trained staff	Service offered with/ or without payment	
Hypertension	13.3%	39.7%	28.7%
Hyperlipidaemia	4.5%	15.5%	18.8%
Diabetes	17.2%	40.4%	26.0%

National Pharmacy database, Berbatis et al. 2003 [40]

Evidence from the 3CPA survey in 2005 (Chapter 6), also showed that PhARIA 1 and PhARIA2–6 pharmacies offered more services in the areas of blood pressure and

diabetes. These pharmacists responded that 47.3% of PhARIA 1 pharmacies offered blood pressure services, and 51.5% from PhARIA2–6 offered the same service. For diabetes, the results showed 20% of PhARIA 1 and 19% of PhARIA2–6 offered this service. Clearly, it is difficult to know the exact extent of service provision or the nature of the services provided in Australia.

The National Database Project used the pharmacy classification system PhARIA. Those pharmacies in PhARIA 2–6 areas, tended to be more likely, especially those in PhARIA 5 and 6, to offer one or more EPS (PhARIA 1, 43.8%: PhARIA 2–6, 56.2%) but this was not statistically significant. Other comparative data used PhARIA1–3 and PhARIA 4–6 divisions of data, preventing further analysis. QCPP accreditation or an identified lack of appropriate knowledge/skills by pharmacists for provision of these services, was not a significant factor in provision of EPS, according to the authors [40]. Factors, listed in Part 2 of the project report, associated in a decision to implement EP services included the state, setting, opening hours, total area of premises, group membership, customers and turnover, but not the rurality [40].

Using a further analysis of diabetes, hypertension and hyperlipidaemia (also previously described as dyslipidaemia) services specified in the National Pharmacy Database, the following results were found. Details of the exact nature of these services were not part of this survey. Respondents could tick more than one box; consequently, the assumption was made to assume that 'not provided' included those pharmacies that indicated they did not offer the service, but not those pharmacies which were planning to offer the service within the next 12 months. The pharmacies that 'provided' the service included those which offered this service currently, at no charge or with payment. The numbers did not match up; as it was assumed there would have been some respondents who ticked more than one box. Never-the-less, it appeared there was little difference in provision between urban and rural pharmacies, but most did not charge for any services listed. Using this rationale, as can be seen in Table 7.8 below, more urban pharmacies provided dyslipidaemia services (PhARIA 1, 18.5%: PhARIA 2–6, 12.9%), hypertension services (PhARIA 1, 43.5%: PhARIA 2–6, 39.59%) and diabetes services (PhARIA 1, 47.0%: PhARIA 2–6, 40.7%).

Table 7.8: National Pharmacy Database comparison of professional services provided by pharmacies in PhARIA 1 and PhARIA 2–6 areas

Professional service	PhARIA 1	PhARIA 2–6	Total
Hypertension (n=997)			
No response	56	78	134
Does not offer	205	301	506
Trained staff	63	53	150
No charge	187	223	410
Receives payment	16	24	40
Will offer in 12 months' time	16	23	39
Offers/does not offer			
No response	56 (12.1%)	78 (12.5%)	134
Does not offer	205 (44.2%)	301 (48.1%)	506
Offers (with or without payment)	203 (43.8%)	247 (39.5%)	450
Total	464 (100%)	626 (100%)	**1090**
Hyperlipidaemia (n=964)			
No response	74	93	167
Does not offer	305	456	761
Trained Staff	21	30	51
No charge	80	70	158
Receives Payment	6	11	17
Will offer in 12 months' time	22	16	38
Offers/does not offer			
No response	74 (15.9%)	93 (14.8%)	167
Does not offer	305 (65.6%)	456 (72.4%)	761
Offers (with or without payment)	86 (18.5%)	81 (12.9%)	167
Total	465 (100%)	630 (100%)	**1095**

Professional service	PhARIA 1	PhARIA 2–6	Total
Diabetes (n=1017)			
No response	51	63	114
Does not offer	182	290	472
Trained Staff	88	106	194
No charge	200	231	431
Receives Payment	7	11	18
Will offer in 12 months' time	36	56	92
Offers/Does not offer			
No response	51 (11.6%)	63 (10.6%)	114
Does not offer	182 (41.4%)	290 (48.7%)	472
Offers (with or without payment)	207 (47.0%)	242 (40.7%)	449
Total	440 (100%)	595 (100%)	**1035**

National Pharmacy Database Project, Part B, Berbatis et al. 2003, [40].

The figures assumed here were also in contrast to others provided by Wibowo et al. in her repetition of the National Database Enhanced Pharmacy Services survey in 2006 [152, 217]. Using the original data from the project, but only focusing on rural pharmacies, Wibowo et al. stated that in 2006 [152, 217], only about one-quarter of rural pharmacies offered diabetes services (similar in 2002) and nearly half offered hypertension services. Only 10% of pharmacies offered hyperlipidaemia services in 2006, a decrease from 15.6% in 2002. It was assumed that rural pharmacies were those in PhARIA 2–6. Unfortunately, any differences or lack of differences could not be explained however, there was little, if any change in 4 years.

The PhARIA ranking of rurality is not as sensitive as other measures, but for the data above, rural pharmacies appear less likely to offer these services. Berbatis et al. [40] stated that predictors overall for these services are a higher turnover, younger owners and an enclosed counselling area. Commitment to continuing education was also a predictor for those providing diabetes services; however, for some, diabetes and hypertension services were not considered part of the job.

This contrasts with the previous PCHCM data indicating provision of the professional services of diabetes and hypertension, and the likelihood of success from a consumer uptake perspective. No difference was found with consumers in the PCHCM who expected and would use these services from either rural or urban pharmacies, whether or not they had CVD. In the PCHCM survey, consumers with CVD were statistically more likely to use a pharmacist for discussing lifestyle changes or dispensing of medication but not the previously mentioned professional services, even though they thought their pharmacist was capable of providing a service for e.g. blood pressure measurement.

This PCHCM survey did ask patients if they would like a service, and would then patronise that service. However, without a construct of the nature and format of the service to be provided, the question could give an answer that was not informative. These questions were directed to randomly selected patients who may frequent different styles of pharmacy (e.g. small rural community pharmacy, bigger discount model or online pharmacy), and might not have any knowledge of potentially differing services or pharmacy constructs. The survey also assumed that any pharmacy could provide this service, and then any patient would patronise and understand the service.

It could also be argued that because these surveys did not ask about other possible services, they are only a measure of existing products and services, and did not give any idea of potential acceptance of any other proposed professional or cognitive service, as mentioned by one key opinion leader (Chapter 4). This simplistic data collection did not provide evidence of marketing, or investigation of the patient population, expectations and the nature of these services.

It should be noted also that this PCHCM data was taken in 2005, and these services are more common today, but also this survey has not been replicated since. Pharmacist prescribing and monitoring are two areas in which the community pharmacist is taking part currently, particularly in other countries [188, 194], and the extent of this practice has also changed since the PCHCM survey was undertaken.

To gain insight and contrast the views of the pharmacy customers with the pharmacists themselves, the following survey was then undertaken.

7.4 Future of pharmacy practice

Leading up to the 6CPA, in 2014, an electronic survey was sent out to gauge the opinions, practice views and future expectations of pharmacy practitioners from both rural and urban areas of Australia.

It was, in part, based on the Grattan Institute report on GP shortages in rural Australia by Duckett et al. (2013) [55] which suggested a wider role for pharmacists, especially those in rural practice, to substitute for some services provided by GPs, in country areas. Current and recent responses to alleviate the doctor shortage had previously included additional training for GPs, and monetary bonuses to help increase the medical workforce. The wider role suggested for pharmacists, one that does already exist overseas in some countries (Chapters 2 and 3), included issuing repeat prescriptions, providing comprehensive vaccination services, and contributing to management of chronic conditions, whilst working alongside the GP, and the rest of the health care team. This assistance for the GP would decrease their workload, thus allowing them more time for attending to more complex cases.

Although the services in the report were only suggested for seven areas of Australia where an acute shortage existed, this survey was given to all pharmacists to gauge their opinions of this potential wider scope of practice. The recommended payments for these additional services in the areas of vaccination services and disease management services from the report, were also used in this survey to understand whether these Grattan Institute suggestions were acceptable to the pharmacy profession itself, should the services be introduced.

Respondents were also asked about their views of the pharmacy practice of the future, professional services, as well as looking at their personal current and future ideal practice using both quantitative and qualitative approaches. Opinion was sought about what respondents would like in the 6CPA, their opinion of professionalism within pharmacy and, finally, their views on the state of the profession itself overall.

7.4.1 Method

This survey was developed using information from Duckett et al. (2013) [55] which suggested additional services could be provided by other health professions, rather

than doctors. One profession proposed was rural community pharmacists. The payments for services suggested by the report were used as a baseline remuneration recommendation in the survey. Respondent demographic information was requested to allow comparison in opinion between different geographic locations, such as rural and urban locations in Australia. After each section, comments were sought to provide additional data for analysis, especially if the practitioner did not want to add the two specific additional services of immunisation and disease state management to their practice. This allowed an explanation to be provided as to why the respondents thought that this was, or was not, an appropriate pharmacy activity.

The main survey was constructed using the LimeSurvey© electronic program (Limesurvey GmbH. / LimeSurvey: An Open Source survey tool /LimeSurvey GmbH, Hamburg, Germany. URL http://www.limesurvey.org) and can be seen in Appendix 8. A separate survey was also created to allow those who wished to enter the prize draw, thus preserving participant anonymity. This prize draw entry was independent to the survey containing the data, and was not seen by the researcher.

Ethics approval was successfully sought from the Tasmania Social Sciences Human Research Ethics Committee of the University of Tasmania (H0014020) (Appendix 9). The final ethics report approval confirmation email is also in Appendix 9.

Requests were sent to the following organisations and the survey was distributed widely and repeatedly in the e-bulletins and e-news of PSA, the SHPA, the AACP, PPA and the ACP. The PGA would not distribute this survey and suggested asking each state branch, which was followed through. However, no responses were received from these branches, as to whether this survey was promoted and distributed to members, or not. The survey was also advertised twice in Auspharmlist, in Pharmacy News and on Twitter during August and September 2014. The advertisements allowed participants to click an embedded electronic link and enter the survey. Promotion in other electronic pharmacy newsletters was sought unsuccessfully.

Quantitative analysis was conducted using IBM SPSS Statistics 21–24© (Armonk, NY: IBM Corp.) and qualitative analysis by grouping the data and looking for common themes as described in previous chapters. When qualitative responses were included in

the results below, the code used was the number of the survey respondent, and the PhARIA work location was added for clarity of a rural or an urban response.

7.4.2 Results

Despite extensive advertising, there were only 135 complete and 33 partial (total 168) survey responses. This could be construed as a small response rate. However, the response rate was difficult to determine because it was not known how many saw and decided to enter the survey. Entries without any content were removed before analysis (total 26). Seven responses were excluded for those who entered the survey site but did not contribute any information, other than some demographic data, leaving 161 for initial analysis with IBM SPSS Statistics 21–24© (Armonk, NY: IBM Corp.). Although this is a small proportion of the overall number of pharmacists in Australia, their opinions were valued and therefore analysed.

There were 66 male respondents (41%) and 95 female respondents (59%) reflecting the Australian distribution at the time AIHW (2014) [218] which stated that 59% of pharmacists were women. It was acknowledged that not all respondents in this survey were generally registered pharmacists, as two were pharmacy students and eight others were interns (provisionally registered pharmacists), an unintended consequence of making the advertising target group broad, and not specifically excluding this group in the survey preamble. One student only entered demographic data, and so was excluded from the analysis, leaving only one who completed the survey in this investigation.

In this survey, the mean participant age was 38.4 years (range 19–78 years), and the years of practice mean was 16.3 years (range 0–59 years). This was similar to AIHW (2014) [218], which stated the average pharmacist age in Australia was 38.9 years.

Home and work PhARIA ratings were checked against postcodes provided and confirmed using 2014–5 PhARIA values [219], which were appropriate to the year in which the survey was conducted. Some PhARIA values provided by respondents were corrected, or added if missing, using the postcode and suburb provided, and the results were as follows:

Table 7.9: Pharmacist PhARIA rating for work and home location

PhARIA value (n=161)	Work	Home
PhARIA 1	131 (81.4%)	133 (82.6%)
2	7 (4.3%)	9 (5.6%)
3	9 (5.6%)	8 (5.0%)
4	7 (4.3%)	6 (3.7%)
5	4 (2.5%)	3 (1.9%)
6	2 (1.2%)	2 (1.2%)
Combined PhARIA 2–6	29 (18.0%)	28 (17.4%)
Unknown	1 (0.6%)	0

The figures above (Table 7.9) indicate 81.4% of participants worked in PhARIA 1 areas, and 18% worked in a rural or remote area (PhARIA 2–6). While 82.6% lived in a PhARIA 1 region, 17.4% lived in a rural or remote region. In 2014, the sample used work location, and had the expected distribution [218] of 91.5% from a Major City or Inner Regional area, and 8.5% from Outer Regional, Remote and Very Remote areas, as per the ASGC classification system used. However, as stated previously, the PhARIA system classifies some Inner Regional areas as urban while others are classed as rural (PhARIA 2–6). The PGA stated approximately 20% of pharmacies were in PhARIA 2–6 in 2016, which concurred with the survey proportions obtained [220]. Data from the PGA in 2017 and 2018 showed that the percentage of pharmacies in rural areas (PhARIA 2–6) was only 17% (Chapter 2), suggesting this survey data was still indicative of the spread of pharmacies and therefore community pharmacists in Australia.

In 2014, the AIHW stated the average number of hours worked per week in all pharmacist roles was 35.7 hours, with 32.6% working part-time [218]. Each respondent in this survey worked a mean of 26.8 hours per week (range 0–55 hours) in his/her primary role, but 14 others had additional practice roles.

The primary role of the participants is shown in Table 7.10 below. In the initial data, there was a disproportionate number of respondents describing their role as 'other', with activities such as an academic, researcher, National Prescribing Service clinical educator, project pharmacist, industry, government and in a Medicare Local. This list

was examined, and as many as possible were reclassified to existing groups, decreasing the 24 'other' pharmacist group down to 10.

The respondents were divided into PhARIA 1 and PhARIA 2–6 groups. Further subdivision showing percentages of roles in each PhARIA group, (PhARIA 1, 131: PhARIA 2–6, 29), percentages within the groups overall, and percentages within the whole respondent cohort (total 161). One pharmacist had missing work location data.

In their primary role 47.8% (77/161) of the urban respondents, worked as a manager, employee, pharmacy owner or locum pharmacist in PhARIA 1 areas, while 79.3% of the rural respondents held these positions in the PhARIA 2–6 areas. Overall, there were 61.1% (100/161) respondents in these primary roles. There were more hospital pharmacists and interns/student in urban areas. There were no medication review pharmacists (one was from an unknown location), or research/academic/education pharmacists who classed this role as their primary role in rural areas. For the remaining pharmacists, 90% who classed their role as 'other', were in PhARIA 1 areas.

Table 7.10: Pharmacist participant primary role—adjusted

Role	PhARIA 1 (n=131)	PhARIA 2–6 (n=29)	Unknown (n=1)	Total (n=161)
Manager/employee	44 33.6% (44/131) 78.6% (44/56) 27.3% (44/161)	12 41.4% (12/29) 21.4% (12/56) 7.5% (12/161)	0 0%	56 (34.8%)
Pharmacy owner	20 15.3% (22/131) 74.1% (20/27) 12.4% (20/161)	7 24.1% (7/29) 25.9% (7/27) 4.3% (7/161)	0	27 (16.8%)
Medication Review pharmacist	16 9.9% (16/131) 94.2%/ (16/17) 16/161 (99.9%)	0	1 100% (1/1) 5.8% (1/17) 0.1% (1/161)	17 (10.6%)
Locum pharmacist	13 9.9% (13/131) 76.5% (13/17) 8.1% (13/161)	4 13.8% (4/29) 23.5% (4/17) 2.5% (4/161)	0	17 (10.6%)
Hospital pharmacist	8	3	0	11

Role	PhARIA 1 (n=131)	PhARIA 2–6 (n=29)	Unknown (n=1)	Total (n=161)
	6.1% (8/131) 72.7% (8/11) 5.0% (8/161)	10.3% (3/29) 27.3% (3/131) 1.9% (3/161)		(6.8%)
Pharmacy Intern/student	8 6.1% (8/131) 80% (8/10) 5.0% (8/161)	2 6.9% (2/29) 20% (2/10) 1.8% (2/161)	0	10 (6.2%)
Project pharmacist/ Research/ Academic/ Education	13 9.9% (13/131) 100% (13/13) 8.1% (13/161)	0	0	13 (8.1%)
Other/blank	9 6.9% (9/131) 90% (9/10) 5.6% (9/161)	1 3.4% (1/29) 10% (1/10) 0.6% (1/161)	0	10 (6.2%)

Respondents were asked for the hours worked in their principal position only; however, 14 had one (6 respondents) or two (8 respondents) additional pharmacy roles (8.9% of the total participants). Of these, two had additional community pharmacy roles giving a final percentage of 64% (103 pharmacists), which was closer to other reported community pharmacy work settings described below.

The 2012 AIHW [218] data, published in 2014, suggested nine of ten pharmacists worked in a 'clinical role' but it did not differentiate between community, hospital or any other pharmacy role, as requested in this survey. The Allied Health Workforce 2012 report [132] using earlier data did, however, differentiate the work settings as shown below in Table 7.11:

Table 7.11: Australia work setting of main pharmacy job from Allied Health Workforce report 2012

Pharmacy practice setting	Number/percentage
Commercial/ business (assumed to mean community pharmacy by this researcher)	14,039 (65.8%)
Hospital	3,762 (17.6%)
Other	3,530 (16.6%)
Total	21,331

Allied Health Workforce 2012 Table 4.6, AIHW 2013 [132]

It was also stated in the August 2018, PGA Vital Facts in Community Pharmacy Fact Sheet [1] that two-thirds of registered pharmacists work in community pharmacy. No more detail was provided in this publication, and the data was referred to as PGA data.

Of the 27 respondents who identified as pharmacy owners in this survey, 20 were from PhARIA 1 work locations (74.1%), while 25.9% (7) had pharmacies in rural areas (PhARIA 2: 1, PhARIA 3: 1; PhARIA 4: 1; PhARIA 5: 4).

Overall, the demographic range suggested the survey sample was one in which the respondents, reflected the approximate distribution of pharmacy practitioners in Australia at the time. Opinions on the individual pharmacy services of vaccination provision and disease state management will be examined in depth. Respondent numbers vary in all sections because not all pharmacists/interns/student answered each question.

Q12–14: Vaccination services in pharmacies

Respondents were asked their opinion of the delivery and cost of provision for vaccination services in pharmacies. They were also asked to order their preferences from the options given, for who should deliver this service in the pharmacy. The results suggested that the preferred person providing the vaccination service in a pharmacy was the pharmacist themselves (92), followed by a trained pharmacist employee (28), and a nurse or nurse practitioner (22). Not providing a vaccination service at all, was the least preferred option (21).

Overall, half the respondents preferred to provide this service themselves but for those

in remote areas of PhARIA 5 and 6, their opinion was less polarised.

Table 7.12: First preference for delivery of vaccination services in pharmacy by PhARIA from all respondents

PhARIA	Pharmacist themselves	Employed pharmacist	Nurse or nurse practitioner	Would not provide this service
PhARIA 1 (n=135)	77 (57%)	24 (17.8%)	18 (13.3%)	16 (11.9%)
2 (n=8)	4	1	2	1
3 (n=10)	6	2	0	2
4 (n=5)	4	0	0	1
5 (n=4)	1	1	1	1
6 (n=1)	0	0	1	0
PhARIA 2–6 combined (n=28)	15 (53.6%)	4 (14.3%)	4 (14.3%)	5 (17.9%)
Total (n=163)	92	28	22	21

Specific opinions of the provision of this service from the 27 pharmacy owners is listed in Table 7.13 below. The majority of both rural and urban pharmacy owners would prefer to provide this service themselves (66.7%; 18/27), more than the combined result for the whole respondent cohort (56.4%). Four pharmacy owners (14.8%) would not provide this service at all.

Table 7.13: First preference for delivery of vaccination services in pharmacy by PhARIA from pharmacy owner respondents only

PhARIA	Pharmacist themselves	Employed pharmacist	Nurse/nurse practitioner	Would not provide this service
1 (n=21)	14 (66.7%)	2 (9.5%)	2 (9.5%)	3 (14.3%)
2 (n=1)	1	0	0	0
3 (n=1)	1	0	0	0
4 (n=1)	1	0	0	0
5 (n=4)	1	1	1	1
PhARIA 2–5 combined (n=7)	4 (57.1%)	1 (14.3%)	1 (14.3%)	1 (14.3%)
Total (n=28)	18	3	3	4

Respondents were asked under which conditions they would be prepared to provide this service (Table 7.14). Nearly half of rural pharmacists thought the Government should pay for this service, compared to only 40% of urban pharmacist respondents. Three-quarters of all pharmacists were of the opinion that the patient should pay full price for this service. Half of the urban pharmacists, suggested that AUD$12.10, plus the wholesale cost of the vaccine with or without the dispensing fee, was sufficient payment as suggested by Duckett et al. [55], but only one-third of rural pharmacists thought AUD$12.10 plus cost, was sufficient payment. This rural pharmacist component increased to half of respondents agreeing, once the dispensing fee was added to the transaction. There were still pharmacists uncertain about service provision, whatever the options provided, especially regarding the payment, should the pharmacist have to charge.

Table 7.14: Preferences of provision of vaccination services in pharmacies

Service	Urban/rural	Yes	No	Uncertain	No answer: unknown urban/rural
Only if the Government pays for the service	**Urban (n=120)**	47 (39.2%)	44(36.7%)	22 (18.3%)	7 (5.8%)
	Rural (n=27)	13 (48.2%)	7 (25.9%)	7 (25.9%)	0
Patient pays full cost	**Urban (n=120)**	87 (72.5%)	9 (7.5%)	20 (16.7%)	4 (3.3%)
	Rural (n=27)	21 (77.8%)	1 (3.7%)	5 (18.5%)	0
Patient pays AUD$12.10 plus wholesale cost	**Urban (n=120)**	68 (56.7%)	19 (15.8%)	30 (25.0%)	3 (2.5%)
	Rural (n=27)	8 (29.6%)	6 (22.2%)	13 (48.1%)	0
Patient pays AUD$12.10 plus wholesale cost and dispensing fee	**Urban (n=120)**	68 (56.7%)	19 (15.8%)	30 (25.0%)	3 (2.5%)
	Rural (n=27)	14 (51.9%)	4 (14.8%)	9 (33.3%)	0

Those participants who would not provide a vaccination service had a variety of reasons. These included that the remuneration suggested (AUD$12.10 plus wholesale cost, with or without a dispensing fee) was not sufficient, that the roles of the pharmacists would be blurred should service this be provided, medication services should be the focus of the pharmacists' role, and concerns about this service affecting the existing relationship with their local prescribers.

Q 15–17: Disease state management service in pharmacies

Participants were then asked if they would consider introducing a disease management service in a pharmacy. First preference for almost all (98.7%; 122/152 using only those who answered the question), would be to notify the GP or health professional with information for the patient's health plan. Secondly, 59.2% (90/152) would adjust doses e.g. in hypertension, but pharmacists were less confident (38.4%; 58/152) about discontinuing or adding another medication, for example, in the treatment of the same condition. About half (49.3%; 75/152) would be prepared to continue dispensing for 18 months instead of 12 months. Not all participants filled in each section, so there are some missing values as can be seen below (Table 7.15).

Table 7.15: Preferences of provision of disease state management services in pharmacies

Service	Urban/rural	Yes	No	Uncertain	No answer: unknown urban/ rural
Adjust doses in e.g. hypertension	**Urban (n=132)**	71 (53.8%)	25 (18.9%)	28 (21.2%)	8 (6.0%)
	Rural (n=29)	19 (65.5%)	4 (13.8%)	5 (17.2%)	1 (3.4%)
Discontinue or start another medication in e.g. hypertension	**Urban (n=132)**	48 (36.4%)	44 (33.3%)	32 (24.2%)	8 (6.0%)
	Rural (n=29)	10 (34.5%)	9 (31.0%)	9 (31.0%)	1 (3.4%)
Notify GP and health professionals to add information to a patient's health record	**Urban (n=132)**	122 (92.4%)	1 (0.8%)	1 (0.8%)	8 (6.0%)
	Rural (n=29)	28 (96.6%)	0	0	1 (3.4%)
Continue dispensing for 18 months not 12 months	**Urban (n=132)**	59 (44.7%)	32 (24.2%)	33 (25%)	8 (6.0%)
	Rural (n=29)	16 (55.2%)	5 (17.2%)	7 (24.1%)	1 (3.4%)
Only if the Government pays for the service	**Urban (n=132)**	63 (47.7%)	21 (15.9%)	32 (24.2%)	16 (12.1%)
	Rural (n=29)	17 (58.6%)	4 (13.8%)	6 (20.7%)	2 (6.9%)
AUD$18.15/15-minute consultation	**Urban (n=132)**	69 (52.3%)	16 (12.1%)	31 (23.5%)	16 (12.1%)
	Rural (n=29)	17 (58.6%)	6 (20.7%)	4 (13.8%)	2 (6.9%)
AUD$18.15/30-minute consultation	**Urban (n=132)**	17 (12.9%)	57 (43.2%)	42 (31.8%)	16 (12.1%)
	Rural (n=29)	7 (24.1%)	13 (45.8%)	7 (24.1%)	2 (6.9%)

Service	Urban/rural	Yes	No	Uncertain	No answer: unknown urban/ rural
Dispensing scripts for 18 months AUD$12.10/15 minutes	**Urban (n=132)**	57 (43.2%)	24 (18.2%)	38 (28.8%)	13 (9.8%)
	Rural (n=29)	16 (55.2%)	5 (17.2%)	6 (20.7%)	2 (6.9%)
Dispensing scripts for 18 months AUD$12.10/30-minute consultation	**Urban (n=132)**	13 (9.8%)	55 (41.7%)	45 (34.1%)	19 (14.4%)
	Rural (n=29)	7 (24.1%)	13 (44.8%)	7 (24.1%)	2 (6.9%)

Two-thirds, using the table above would like the Government to pay for these services (60.5%; 92/143). Sixty percent (60.1%; 86/143) would charge AUD$18.15 for a 15-minute consultation but less than one-fifth (16.8%; 24/143) would accept AUD$18.15 for a 30-minute consultation. If a fee was set for continued dispensing, half thought AUD$12.10 for 15 minutes (50%; 73/146) was suitable, but if the same service took 30 minutes this figure was unacceptable (14.3%; 20/140). Many pharmacists were uncertain about most of these services, suggesting that they had not thought about undertaking the service, or were concerned about the impact on the health system within their community. Respondents also wrote that the remuneration was considered low for the work and time involved, in what was seen as an additional service within the workplace.

Urban pharmacists were more uncertain about adjusting doses, whether or not AUD$18.15 was a suitable payment for 15 minutes of consultation time, and AUD$12.10 suitable for 15 or 30 minutes for an extended dispensing service. Rural respondents were more likely to adjust doses, supply, or continued dispensing. They would also supply the service whether this takes 15 or 30 minutes of time. Half the respondents in each group preferred the Government to pay for disease management services (PhARIA 1, 47.7%: PhARIA 2–6, 58.6%).

The results of the following table (Table 7.16) show the unease about the potential alteration in the relationship with local health professionals, in this case the GP, should these services be introduced. Respondents were very unsure if the services would help or hinder their relationship with their local GPs. Fewer rural respondents appeared

uncertain about the impact of new services, on their current good relationships with GPs, compared to the respondent group as a whole.

Table 7.16: Relationships with local GPs

Relationship with local GPs	Urban/rural	Yes	No	Uncertain
Currently good	**Urban (n=125)**	107 (85.6%)	3 (2.4%)	15 (12%)
	Rural (n=28)	24 (85.7%)	1 (3.6%)	3 (10.7%)
Would services improve the relationship?	**Urban (n=125)**	37 (29.6%)	28 (22.4%)	60 (48.0%)
	Rural (n=28)	5 (17.9%)	2 (7.1%)	21 (75%)
Would services impact adversely on the relationship?	**Urban (n=125)**	25 (20.0%)	25 (20.0%)	75 (60.0%)
	Rural (n=28)	2 (7.1%)	5 (17.9%)	21 (75%)

Some respondents thought these services were outside the scope of community pharmacist practice:

> Health must be approved holistically. You are making recommendations without having the GP there with you can complicate matters. As pharmacists we may not understand or know the whole diagnostic picture of the pt [sic) so suggestions may not be appropriate. You need the medical team with you in the discussion like they do in hospital. (*8, PhARIA 2*)

Others commented that the GPs would see introduction of these services as decreasing their own revenue and business, as well as 'service creep':

> It would affect their income! (*74, PhARIA 1*)

> GPs currently have little awareness of [the] potential role for pharmacists in disease state management. Would need to be familiar and comfortable that those offering the service are skilled enough to do so. Immunisation GPs and nurses are concerned with 'scope' creep, so is probably an area which will cause more angst. (*112, PhARIA 1*)

Another said that they thought their GP would think this would be beyond the scope of pharmacy practice:

> Some of our nearest GPs (60km away) are 'old school' and I believe that they would see this as practicing beyond our capacity and stepping on their toes—they will not even write HMR referrals so doing these services is a big ask! (*124, PhARIA 5*)

However, some thought it would relieve GP workload, and might help show the potential scope of pharmacist practice to assist the health team:

> Again, the situation needs to be part of the 'health team' not a competitor. You just have to make it work. (*67, PhARIA 5*)

Overall, despite the uncertainty and negativity in these comments, respondents had good relationships with GPs currently, and few thought it would influence negatively on these current relationships. It appears that not all respondents might have ever discussed these health service options with the local health professionals, to gauge opinion and agreement. More rural respondents did not know if the services would improve or adversely affect their relationship with local GPs, compared to their urban counterparts.

Q18–19: Vaccination and disease state management service in rural areas

When asked, if vaccination and disease state management services should only be provided by rural pharmacies, the majority believed that all pharmacies should be able to provide these services, not just those in rural or remote areas (Table 7.17).

Table 7.17: Immunisation and disease state management services provision by rural pharmacies compared to all pharmacies

Response (n=152)	Immunisation	Disease state management
Yes, rural only	20 (13.2%)	22 (14.5%)
No, all pharmacies	132 (86.8%)	130 (83.5%)

Less than 15% thought that only rural pharmacies should deliver vaccination or disease state management services. This opinion was not specifically from rural respondents themselves as 75% of the respondents (15/20), worked in PhARIA 1, with the remaining 25% in PhARIA 2–6. Lower numbers suggested that disease state management service provision should only be in rural areas, with 9%, (5/22) of these working in a PhARIA 2–6 area. Over 80% of these respondents thought both services should be provided by all pharmacies, regardless of geographic location.

Respondents were then asked about their current and future workloads to see if there were any differences between those in rural and urban practice.

Q22–23: Current workload and future workload aspirations

Respondents were asked to record the percentages of their various pharmacy-related activities within their current work role, their future aspirations and their probable work activities in 5 years' time. Ten activity options were given covering: dispensing and counselling, OTC sales and advice, management and administration, professional services such as MedsChecks or Diabetes MedsChecks, home or nursing medication reviews, PPI activities, training and education, ward-based clinical activities, research, professional development and 'other' activities not previously specified.

Some respondents did not answer this section, and others answered only a part, implying they will either retire, leave the profession, or just did not want to complete this section of the survey. It was acknowledged that this was a complex question. Despite being asked to mark a percentage for each activity in each set, such as current pharmacy role, so that it would total 100%, many of the totals were over, or under this figure. It was assumed respondents used a different interpretation of this request. These errors were then recalculated, and adjusted, to ensure each activity group entry added up to a total of 100% for individual respondents. Table 7.18 below shows the amended results from all the participants, who answered this question.

'Other' activities respondents noted in this question were:

> retirement, vaccinations, consultations on continued prescribing, other pharmacy–based programs (e.g. sleep apnoea, bone density testing etc.), teaching allied health students, working with GPs, being an advocate, community workshops and other education roles within residential aged care settings, DAAs, front-of-shop duties (stock control) and other administrative duties (6), compounding and specialist products (2), opioid replacement services (2), marking and mentoring (4), working with the professional organisation and Medicare Local (as it was when the survey was conducted, now a Local Primary Health Care Network).

It can be seen in Table 7.18, that dispensing/counselling was the main activity, with OTC sales and advice second. Respondents would like to do less dispensing in 5 years' time but considered this proportion of time would remain the same. Respondents also wanted to do more MedsChecks, Diabetes MedsChecks and PPIs, and were confident they would increase this role in their practice. Respondents would like to decrease the

amount of time spent in administration, management and stock control but they didn't expect this to happen, and suggested this might even increase in five years' time. Those conducting Medication Reviews (HMRs and RMMRs), would like to increase this role, but did not think this would be a reality, and that this proportion of their workload would remain the same.

It was interesting to note that respondents considered they spent 7.6% of their time in professional development, and would like to do more. They expected that in 5 years' time this would increase slightly. Despite the desired increases in the areas of cognitive services and professional roles, respondents thought this would not happen in the future. The following tables use an average percentage of the activity from the cohort as a whole.

For those in PhARIA 2–6 areas, current, possible and probable roles for those in rural areas of Australia differed from those in urban areas, as shown in Table 7.18. It appears that rural pharmacists did far more dispensing and associated counselling (PhARIA 1, 28.3%: PhARIA 2–6, 41.6%). Rural pharmacists would like to halve these rates, but suggested only a small decrease will be achieved in five years' time. Administrative duties were expected to rise, as well as levels of professional services (MedsChecks and Diabetes MedsChecks). Home Medicine Reviews were expected to decrease. Despite desired increases by these participants in the areas of cognitive service and professional roles, in five years' time probable levels of activity would be similar to current levels.

Rural participants did slightly less CPD then urban participants (PhARIA 2–6, 5.8%: PhARIA 1, 7.9%) when the survey was conducted, but in five years' time expected to double this amount (PhARIA 2–6, 11.4%: PhARIA 1, 8.5%).

Community pharmacy respondents were selected using the inclusion criteria of those who recorded their role as a manager/employee, pharmacy owner and locum or did any community pharmacy work in a secondary capacity. This thus removed the medication review pharmacist primary role group, who mainly worked in the PhARIA 1 area. The PhARIA 1 group, as shown in Table 7.18, appeared to do less dispensing, so this additional analysis was undertaken to confirm if this result was location, or activity specific. It can be seen from the table below (Table 7.19), there were wide ranges within the specific activities listed, for individual community practitioners.

Table 7.18: Current workload activities, future aspirations and probable workload urban and rural participants

Activity type	Urban (PhARIA 1) or rural (PhARIA 2–6)	Current pharmacy role	Aspirations for 5 years' time	Probable workload in 5 years' time
Dispensing and patient counselling for prescriptions	**Urban**	28.3%	19.9%	27.7%
	Rural	41.6%	24.6%	37.1%
OTC S2/ S3 sales and advice	**Urban**	12.3%	11.9%	12.2%
	Rural	17.4%	15.8%	12.7%
Administration/management/stock control	**Urban**	8.4%	4.6%	11.2%
	Rural	9%	7.7%	14.8%
Pharmacy medication review programs (MedsCheck, Diabetes MedsCheck)	**Urban**	3.2%	9.2%	7.5%
	Rural	1.7%	9.1%	5.9%
Other medication review programs (HMR, RMMR)	**Urban**	10.4%	21.1%	11.4%
	Rural	2.7%	12%	3.9%
PPI programs (Clinical Interventions, Dose Administration Aids, Screening and Risk Assessment/ Disease State Management, Health Promotion activities)	**Urban**	6.9%	11.1%	11.4%
	Rural	7.2%	13.9%	3.9%
Training of interns/students within a pharmacy setting	**Urban**	3.3%	6.5%	5.2%
	Rural	2.8%	7.5%	5.2%
Educator or academic activities	**Urban**	9.7%	13.4%	9.7%

Activity type	Urban (PhARIA 1) or rural (PhARIA 2–6)	Current pharmacy role	Aspirations for 5 years' time	Probable workload in 5 years' time
	Rural	2.8%	6.1%	2.3%
Research	**Urban**	3.5%	7.1%	5%
	Rural	0.4%	3.2%	1.5%
Ward based clinical services	**Urban**	3.2%	5.6%	4.6%
	Rural	7%	8.3%	7.7%
Continuing professional development	**Urban**	7.9%	8.4%	8.5%
	Rural	5.8%	8.9%	11.4%
Other	**Urban**	3.1%	3.1%	4.6%
	Rural	1.5%	0.1%	4.6%
Numbers of participants	**Urban**	n=108	n=103	n=97
	Rural	n=25	n=23	n=23

Table 7.19: Current workload activities—community practice compared to all respondents practice

Activity type	All current role PhARIA 2–6	Community practice PhARIA 2–6 (range)	All current role PhARIA 1 (range)	Community practice PhARIA 1 (range)
	(n=25)	(n=20)	(n=108)	(n=83)
Dispensing and patient counselling for prescriptions	41.6%	43.6% (10%-80%)	28.3%	40.3% (0%-100%)
OTC S2/ S3 sales and advice	17.4%	17.1% (5.9%-30%)	12.3%	16.1% (0%-40%)
Administration/management/stock control	9%	9.8% (0%-25%)	8.4%	10.8% (0%-25%)
Pharmacy medication review programs (MedsCheck, Diabetes MedsCheck)	1.7%	2.1% (0%-10%)	3.2%	3.7% (0%-60%)
Other medication review programs (HMR, RMMR)	2.7%	2.8% (0%-21.1%)	10.4%	3.7% (0%-60)
PPI programs (Clinical Interventions, Dose Administration Aids, Screening and Risk Assessment/Disease State Management, Health Promotion Activities)	7.2%	8.5% (0%-21.1%)	6.9%	9.2% (0%-39.1%)
Pharmacy medication review programs (MedsCheck, Diabetes MedsCheck)	2.8%	3.0% (0%-12%)	3.3%	3.7% (0%-18.2%
Training of interns/students within a pharmacy setting	2.8%	2.5% (0%-12%)	9.7%	1.6% (0%-12.9%)

Activity type	All current role PhARIA 2–6	Community practice PhARIA 2–6 (range)	All current role PhARIA 1	Community practice PhARIA 1 (range)
Educator or academic activities	0.4%	0 (0%)	3.5%	0.1% (0%-6.4%)
Research	7%	3.0% (0%-60%)	3.2%	1.5% (0%-56.3%)
Continuing professional development	5.8%	6.2% (0%-23.8%)	7.9%	7.6% (0%-43.4%)
Other	1.5%	1.4% (0%-20%)	3.1%	1.8% (0%-80%)
Totals	100%		100%	

Both community practice groups now had similar levels of time spent dispensing and providing OTC sales and advice. There were no other points of difference between those community pharmacists practicing in an urban area compared to a rural environment

In conclusion, pharmacists appeared to recognise the various aspects of their roles and would like to expand the professional areas. Some believe this may happen within community pharmacies, but many did not. Rural community pharmacists did more dispensing and counselling than urban counterparts but once the data was adjusted by removing those not assumed to be in community pharmacy practice, the results were similar. It is acknowledged that this data represents a small pharmacist sample and that there were far more education/academic pharmacists in the PhARIA 1 group, potentially affecting this analysis.

Participants were then asked their opinion on the profession itself and potential changes for the upcoming 6CPA of the time.

Q24–25:6CPA Participant opinions for next agreement changes

Respondents were asked what changes they would like to see in the 6CPA, using the seven selected services listed in Table 7.20. They were also asked to provide any other service or activity suggestions that should be included or added to the 6CPA.

Table 7.20: Pharmacist participant suggested changes for the 6CPA

Service	Decrease	Keep the same	Increase
Dispensing (n=120)	15 (12.5%)	43 (35.8%)	62 (51.7%)
MedsChecks/Diabetes MedsChecks (n=126)	20 (15.9%)	30 (23.8%)	76 (60.3%)
HMRs/RMMRs (n=131)	4 (3%)	32 (24.4%)	95 (72.5%)
Clinical Interventions (n=126)	14 (11.1%)	27 (21.4%)	85 (67.5%)
DAAs (n=126)	8 (6.3%)	41 (32.5%)	77 (61.1%)
Staged Supply (n=122)	8 (6.6%)	56 (45.9%)	58 (47.5%)
Rural Workforce Program (n=111)	6 (5.4%)	58 (52.3%)	47 (42.3%)

Participants wanted an increase for all services, apart from the rural workforce programs. This was the only statistically significant result (Chi-sq.=0.023) of the

suggested 6CPA changes. While only 42.7% of participants suggested increasing funding for the Rural Workforce Program (as it was known, now the Rural Support Program) nearly half suggested that funding should stay the same. This was in contrast to all other recommendations, in which a funding increase was suggested. It was acknowledged that this program was probably the least known service, especially by those who did not practice in rural Australia.

Sixty-two respondents, 36.9% of the cohort, provided additional comments suggesting more reimbursement for services, many of which are currently provided without charge. A suggestion was made by two respondents, for reimbursement of extra time spent for counselling an initial supply. Also recommended was an audit of the programs. Comment was made about the lack of wage increases over time, and a suggestion that payments for services should go to the pharmacist who provided them, not the pharmacy owner. Some proposed a direct reimbursement from Medicare for services, with the introduction of pharmacist health professional Medicare numbers. Lifting the payment cap on HMRs and RMMRs was also suggested.

Rural-specific comments included extending the locum service to all areas outside capital cities, and an acknowledgement of the cost and time of providing services in a regional, rural or remote pharmacy, and improved access to training.

The following additional services and reimbursements for pharmacy services were suggested by the respondents:

> ***Pharmacy service reimbursement suggestions:***
>
> vaccination, blood pressure measurement, INR measurement, pharmacotherapy, OTC counselling, prescription counselling with an additional payment for initial supply, counselling, health promotion and screening, clinical activities outside pharmacies.
>
> ***New reimbursement role suggestions for pharmacists:***
>
> GP surgeries, disease state management, care plan participation.

Q26: Opinions of the future of pharmacy in 5 years' time

Overall, the participants were generally pessimistic about the future of pharmacy, and half thought that pharmacy will be in a worse, or much worse position, in five years' time (19.2% much worse; 30.8% worse), 16% thought it would remain the same and

17.3% thought it would be better, while only 3.2% thought it would be much better. Some answered 'Not Applicable' and it could be assumed that they will not be in the profession in five years' time. If two answers were recorded (three cases), the more negative answer was chosen for analysis. (Table 7.22)

Table 7.22: Pharmacist participant opinion of the future of pharmacy by PhARIA grouping

PhARIA	Much worse/ worse	Neither worse nor better	Better/much better	Total
PhARIA 1	64 (58.7%)	16 (14.7%)	29 (26.6%)	109
2	4	3		7
3	3	4	1	8
4	4	1		5
5	2	1	1	4
6	1		1	2
PhARIA 2–6	14 (53.8%)	9 (34.6%)	3 (11.5%)	26
Total	78 (57.8)	25 (18.5%)	32 (23.7%)	n=135

Opinions were similar for rural respondents (PhARIA 2–6) and urban (PhARIA 1) pharmacists, and both thought pharmacy would be worse off in 5 years' time. While one-third of rural pharmacists were ambivalent, only 14.7% of PhARIA 1 pharmacists had this view. One-quarter of PhARIA 1, pharmacists were confident that the profession would be better, or much better off, in 5 years; however, only 11.5% of rural pharmacists shared this view.

Q27: Opinions of pharmacy professional qualities in 5 years' time

Participants thought some of the professional qualities of pharmacists would change in the next five years (Table 7.21). The parameters used were altruism, accountability, excellence, duty, honour and integrity and respect for others as suggested by Chisholm et al. (2006), and reiterated in the America Board of Internal Medicine's Project Professionalism (1995) [221, 222].

While the respondents thought altruism might increase, decrease or stay the same in even proportions, almost half thought accountability would increase, while qualities of excellence in practice, duty of care, honour and integrity and respect for others would

stay the same.

Table 7.21: Pharmacist participant opinion of professional qualities in 5 years' time

Professional quality (n=136)	Increase	Stay the same	Decrease	No response
Altruism	41 (25.5%)	47 (29.2%)	48 (29.8%)	25 (15.5%)
Accountability	78 (48.4%)	51 (31.7%)	7 (4.3%)	25 (15.5%)
Excellence	47 (29.2%)	69 (42.8%)	20 (12.4%)	25 (15.5%)
Duty	37 (23.0%)	75 (46.6%)	24 (14.9%)	25 (15.5%)
Honour and integrity	30 (18.6%)	73 (45.3%)	33 (20.5%)	25 (15.5%)
Respect for others	44 (27.3%)	67 (41.6%)	25 (15.5%)	25 (15.5%)

Q28: Final respondent comments qualitative analysis

Respondents were given the opportunity to give further comments at the end of the survey. They wanted greater roles in overall patient care, and to be part of the management team, despite the negative comments given, relating to lack of pay increases, and payment for additional services elsewhere in the survey.

The following quotes exemplify the suggestions made by respondents:

> …greater availability for clinical disease management with a patient centred approach… (*5, PhARIA 1*)

> all pharmacist practitioners to be working to the same pharmacist care model;…to work collaboratively within the profession and with other health professions. Must have clinical handover standards to ensure patient's current health care plan and medicines plan is accurate. (*80, PhARIA 1*)

However, the existing dispensing workload influenced provision of these other services. The services suggested should not require additional pharmacy accreditation, and should be within the current business frameworks:

> For equity and transparency, being QCPP accredited should NOT be a requirement for receiving payments such as PPIs, DAA and even NDSS accreditation. (*125, PARIA 1*)

Pharmacists acknowledged that their remuneration was an issue, and some had been employed without a pay rise for 5–10 years of service:

> Would like to see less pressure on Pharmacists to keep providing the same services and yet expected to embrace more and more other services which entails more time note keeping and less actual contact time with clients. Remuneration is still one of the lowest in all professions. My wages have essentially not increased in 10 years and yet the demands on me have become greater and greater each year. I'm not sure how new initiatives can improve this without expecting more of Pharmacists who with increasing script loads struggle to sometimes maintain the status quo. (*51, PhARIA 1*)

> Actual $$$ for pharmacists. No real pay rises for 5 years. Quality of life being eroded yearly. More work, service supply time pressures without any monetary reward. (*92, PhARIA 4*)

It was also suggested that the pharmacists themselves should be supported and receive the incentive payments, not the owners of the pharmacies.

> It is not only the matter of new initiatives. The incentives should be paid at least in part to the employee and not the employer. (*22, PhARIA 2*)

> I think our current activities need to be well supported and funded before new initiatives are burdened on businesses that are already stretched to survive. (*151, PhARIA 1*)

Payment for services rendered, and adequate reimbursement, were two of the overarching themes, with adequate remuneration for the practitioners themselves. Respondents also called for audits of programs, and an ability for practitioners to charge under the Medicare Benefits Scheme (MBS), as well as for services provided within the pharmacy setting.

One urban practitioner would like to see in rural practice more subsidies under the Rural Workforce Support Program:

> More subsidy should be available for rural & remote pharmacists to help provide locum services not just in emergency situations (i.e. for normal annual leave assistance on par with the 4 weeks every other worker is entitled to). (*125, PARIA 1*)

7.4.3 Discussion: Differences and similarities for rural and urban pharmacies

This survey was extensively promoted in the pharmacy journals and electronic communications, yet still received a relatively low number of participants. Never-the-

less, some interesting findings could be drawn from the results. Although there were not many rural respondents (but an acceptable proportional representation compared to urban respondents) in the cohort, it appeared all respondents were supportive of practice changes for all pharmacies, and not just for the rural pharmacies.

The participants were interested in providing vaccination services and disease management services themselves, but did not agree with the low payment options suggested by Duckett et al. (2013) [55]. More urban pharmacists were prepared to accept a lower fee for vaccination services, but overall having the patient pay was the preferred option for all. While almost all were prepared to notify GPs and other professionals about information to add to a patient's health plan, only two-thirds would adjust doses (in the example given for hypertension medication), half would be happy to continue to dispense for 18 months instead of 12 months, but only one-third would discontinue or start medication. Rural pharmacists were more prepared to adjust doses or provide continued dispensing than urban pharmacists. They were also prepared to spend longer with patients if delivering disease state management services. The preference for all, was the Government funding this service. The low percentages overall in accepting these roles, suggested that additional clinical roles and requesting payment for services were out of the 'comfort zone' for many pharmacists.

There was a high number of 'uncertain' responses as to whether or not, the relationship with GPs, would be changed if the pharmacy provides vaccination services and disease management services. The potential impact of this change, suggested that pharmacists had either not thought about introduction of these services, or discussed this with their local health professionals. Rural pharmacists had a higher degree of uncertainty about the impact on their relationship with local GPs, whether this be positive or negative. This could be indicative of a professional isolation, or a divide that exists between pharmacists and other local health services, as suggested by the key opinion leaders and PAART pharmacists previously (Chapters 4 and 5).

When participants examined their own practice, they appeared to want to change their workload, and do less dispensing and counselling, as well as less participation in OTC sales and advice. However, they did not think this would change for them in the next five years. It appeared rural pharmacists were much more involved in these activities

than their PhARIA 1 counterparts, acknowledging that the PhARIA 1 respondents had a wider range of primary roles. When the data was re-examined using the cohort assumed to be in community pharmacy, the dispensing and OTC counselling levels were similar. The pharmacist dispensing portion of average workload was about 40%, much less than the approximately 70–75% for this role suggested as by others [179, 197, 200]. One could also argue the lower full-time equivalent workforce in rural and remote areas [218] would mean these quintessential pharmacy roles must be undertaken first before any additional professional services.

Many participants would like to change their role, but did not think this would happen in the next 5 years, suggesting complacency or hesitancy, or an inability to make the move to another role, due to lack of local opportunity or educational payment requirements. It was also acknowledged that there could be personal reasons, which would override any capability or capacity, for these survey respondents to change.

Participants suggested the funding in the 6CPA for staged supply and for rural pharmacies should stay the same or be increased, in contrast to, the definitive increases suggested for other 6CPA programs. It was probable that if participants did not have a working knowledge of the breadth and scope of rural programs, and this could limit their knowledge and consequent answers compared to the increases suggested for all other sections.

More rural respondents were uncertain about the future of pharmacy in 5 years' time. While half thought, it would be worse or much worse, only one-quarter of PhARIA 1 pharmacists, and an even lower percentage of 11.5% of rural pharmacists thought this would improve.

Respondents thought issues of workload, remuneration, practice and payment models hampered the profession's progress. When asked for additional comments, the pharmacist wages were mentioned on more than one occasion, as many had not been given an increase for some years, despite the expectation to provide additional services. Comment was made that the payments currently go to the owner, not the pharmacist who may be using his/her increased level of skill to provide professional services, over and above those expected skills of dispensing, counselling and sales. Respondents commented about pharmacy not being part of the health care team and the challenge of

increasing prescription loads and additional services, which leaves little room for more professional roles. These responses appeared to be across the professional groups and there were no differences from those in rural practice.

7.5 Limitations

The data obtained from the research project to develop a PCHCM (2005), had to be recoded to simulate the PhARIA pharmacy system for comparative analysis. The age of this data examined also needed to be taken into consideration, but it did provide a base for community pharmacy practice comparison today.

The main limitation of the Current and Future Practice Survey was the low number of respondents, despite repeated attempts to increase participation.

7.6 Summary

In 2005, as part of the PCHCM project, consumers were asked if they were satisfied with their pharmacy, its capability in providing CVD related professional services, and the likelihood the consumer would then patronise these services. Rural consumers with CVD thought their pharmacy was more capable of providing a blood pressure service compared to the other options provided, a result with statistical significance ($p<0.00$). However, these consumers were also less likely to use lifestyle change services or dispensing services compared to those with CVD living in urban areas. For other services, such as blood pressure screening, cholesterol measurement and diabetes services, there were no statistically significant differences for rural or urban consumers in their opinion of the pharmacist capability and likelihood of use, if the pharmacy provided the service.

Pharmacists were the most likely person to ask about medicines and to monitor the outcomes of drug treatment. Consumers were very satisfied with their pharmacy service, and there was no difference in satisfaction between rural and urban pharmacies.

There were discrepancies between the consumer perceptions of the number of pharmacies providing services and the numbers of services found by other researchers [40, 152, 217]. The PCHCM respondents thought the pharmacies offered far more

services in hypertension, dyslipidaemia and diabetes than acknowledged by pharmacists in the National Database study. The 3CPA evaluation data provided yet another set of levels of professional service provision. In addition, descriptions of the nature of the professional service was also lacking. Most, whether they be urban or rural, offered the service without payment. Although there was a three-year difference in compilation of this data, is was not expected that this increase would have naturally occurred.

Respondents from the Current and Future Practice Survey provided a valuable insight into practitioner opinion, workload and aspirations. Rural respondents had overall, similar opinions to their urban counterparts. Neither group thought payments suggested by Duckett et al. (2013) [55] were sufficient for the suggested vaccination and disease management services. It should be noted these charges were higher than the PAART pharmacists in Chapter 5 suggested, for the cardiovascular professional services, on survey and on interview. Lack of pay increases, additional professional service expectations and increased dispensing commitments were examples of current issues, which discouraged the respondents from providing a more positive expectation of the future of pharmacy practice.

Although there were suggestions to broaden the profession's scope of practice the respondents, in many instances, did not think the changes were possible in their own working environment. This survey has provided an insight into individual pharmacist practice and their expectations of the future. Overall, there were few rural and regional differences in opinion and practice, but rural pharmacists were prepared to offer a greater range of disease state management services than their urban counterparts.

The following chapter will bring together and discuss the initial literature review chapters, as well as the analysis of interviews and surveys undertaken, to enable conclusions to be drawn and provide recommendations and suggestions for further research from the data obtained.

Chapter 8: Discussion

Much has been written in all forms of the pharmacy literature about the nature, purported differences, and staff shortages in rural community pharmacy practice [80, 159-164]. There have also been many champions of rural and remote pharmacy in Australia, such as 'Robbo' [43], Karalyn Huxhagen [42]and Patrick Mahony [80], who have promoted the practice and lifestyle, which is often peppered with its frustrations, trials and tribulations. However, the lists of influential pharmacists do not usually contain these people, despite the acknowledgements they may have received in the past. The 2018 Australian Journal of Pharmacy Agenda Setters List [223], does contain two rural pharmacy owners (multiple pharmacies, PhARIA 1 up to 5), who are part-time community pharmacy practitioners. One rural employed community pharmacist from PhARIA 3, was on the 'bubbling under' list. However, these practitioners made the list for their 'outside' activities, not their practice in the rural community pharmacy itself. Little supporting published evidence has been discovered for this thesis, which compared the individual practice components. Any substantial differences between rural and urban community pharmacy practice, in either the Australian, or the international literature has not been found.

The literature review for this thesis attempted to set the scene in the areas of health, rural health, health policy, and the practice, governance and workforce of pharmacy in Australia. A systematic review was then conducted to determine more fully, what had been reported thus far in the international literature on rural and urban community pharmacy practice. Then, various investigations were undertaken, to search for any further differences. Interviews took place with two groups, key opinion leaders, including a follow-up series several years later, and with the 'at-the-coal-face' practitioners. Analyses were also undertaken looking for any differences using previously unpublished evaluation data from the 3CPA, 4CPA, and the PCHCM. Finally, a practitioner survey was conducted to look for practice differences based on the views and opinions of the pharmacists themselves.

The research questions will be discussed, using the results of the various investigations conducted. It should be noted that these studies were conducted over a significant timeframe, thus allowing a unique approach to investigate comparisons and differences

in rural and urban community pharmacy.

8.1 Discussion based on the research questions

What is meant by the concepts of 'rural', 'rural health' and 'community pharmacy practice' was initially studied and reviewed to set the background scene for this thesis.

As described in Chapter 1, there have been many systems over the years to define what is classed as 'rural' Australia. Other classification systems, in individual countries have been developed (Chapter 3), with no consistent criteria denoting location, population size or health service availability. Population indicators were generally used, which were not necessarily particular to the pharmacy profession. Each country was found to have a different method of classing geographical zones as rural or urban (Chapter 3). These rural or remote classifications were specific to that country, and using the descriptions were clearly not transferable to another.

Australia has used various rural classification systems over the years, and even now has several in concurrent use, depending on the community or funding requirements, for example, in areas of social housing, education or health. Pharmacy—in Australia—has used the same system since 2000, the PhARIA system, which was based on the ARIA system (Access/Remoteness Index of Australia) [24, 25]. In Australia, 83% of pharmacies are in PhARIA 1 areas, with the remaining 17% of pharmacies in PhARIA 2–6 areas [64, 65] (Chapter 2), providing services for nearly 30% of the population (Chapter 1). However, while some areas receive the highest ranking of PhARIA 1 using this particular system, they would have a second or third level classification in other geographical systems, and would consequently enjoy a rural or regional status, should a system such as the Modified Monash Model [21] be introduced.

Community pharmacy program funding for those in rural areas is dependent on this PhARIA system. Available for PhARIA 2–6 pharmacies, the Rural Support Program currently provides a number of programs, including emergency locums, intern support, and pharmacy maintenance allowances (Chapter 2). Also available, is funding for the practitioners themselves (professional development and intern support), provided the practitioner is an Australian citizen or permanent resident (Chapter 2). These allowances have changed considerably over time, and were initially to support the

pharmacy itself, and now include the practitioner. This more sophisticated rural funding allocation model has evolved over the course of the CPAs (Chapter 2).

Just under one-third of the population in Australia, live in regional, rural and remote areas [8]. The spatial distribution of the supply of the clinical health workforce study considered that up to one hour's travel to a health service was reasonable [19]. However, the average distance to a pharmacy is 6.5km [168]. Consumers in other countries might consider this distance as too far to travel, depending on their population spread and expectations of care (Chapters 1–3).

Consumers today have alternative methods of obtaining pharmacy goods (prescriptions etc.), such as online purchasing, or the use of a pharmacy depot in some rural areas. In addition, models of community pharmacy in Australia are changing with a rise in the numbers of discount pharmacies, which focus on price, a concept that seemingly appeals to many consumers. Many are now based in rural areas. Added to this, are the changing ownership models, with fewer individual owners and the evolvement of partnerships, absentee owners or quasi-franchises (Chapter 2). The suggestion is now that the pharmacist seen by the customers in the community pharmacy, is not necessarily the owner of the business. However, this occurrence is not unique to rural practice.

Still today, the health of Australians in rural areas is worse than those in urban areas, with 54% having a chronic illness, compared to 48% of people who live in major cities [224]. The Health Survey (2014–5) showed that while more people lived with a chronic health condition overall, the impact on health and longevity was worse for those in rural and remote areas of Australia [6]. Mortality for those in remote or very remote areas was 1.3 times of that in major cities [224]. This differential has continued to exist over time, despite the many programs and policies that have been and continue to be put into place (Chapter 1). However, rural people were less likely to complain about health services [29] and use health and pharmacy services less than those living in urban areas (Chapter 1). Chronic disease risk factors, such as smoking, low exercise levels, alcohol consumption and obesity, were also increased, the more remote the community (Chapter 1). Policy documents and frameworks today which guide approaches for improvement of health concentrate on prevention and management of chronic

conditions. Regional, rural and remote people are listed as a priority area. [37]

The following themes have emerged from the various forms of research undertaken for this thesis. Using the background information, these themes will be discussed, and the data found related to the research questions.

Primary research questions:

- ***How, and in what aspects, does rural community pharmacy practice differ from that in urban areas?***

Investigations undertaken

The first investigation undertaken was an international systematic literature review (Chapter 3) which looked at studies in which rural and urban community pharmacy practice had been compared. Only those publications, in which a comparison in community pharmacy took place, with a current or proposed service, were accepted for this review. Dispensing and its associated services were excluded, as it was assumed to be a constant, wherever the practice location. Few relevant publications were found (20), and only four had these comparisons as the focus from the outset; the rest declared the comparison as a by-product of other research foci. A total of 17 studies were found in the initial review (up to 28 February 2018), with an additional three studies from the supplementary literature review (1 March 2018 to 31 July 2018). The studies used surveys, interviews and focus groups with a wide range in both the number of participants (10–708) and time frames (1993–2018). Many investigations undertaken were in specific geographical locations, which it could be argued, were not transferrable to other rural areas or even other countries but it would be difficult to control for this. The topics included areas of pharmaceutical care and cognitive services (professional services), public health or enhanced pharmacy services, which also included screening and support, primary health care and treatment services. Two papers were about proposed services.

It was found that rural customers were more willing to talk about general health matters, and ask advice from the pharmacist, and it was the rural pharmacist who initiated conversations, and talked longer than the urban pharmacists [186, 190, 193]. Rural pharmacists considered this assistance was part of their role [190]. However two

studies found no differences between the groups in the areas investigated [192, 195] (Chapter 3). These abilities and time taken to talk to customers by rural pharmacists, were also confirmed with comments from key opinion leaders (Chapter 4) and PAART pharmacists (Chapter 5).

Scott et al. (2016) [188] in Canada found higher levels of public health services, and Haag and Stratton (2010) [179] in the US found greater levels of professional services, in rural areas, despite pharmacists providing similar levels of dispensing. But as did others [188], the authors then challenged their own results citing these differences were accounted for by patient access to a pharmacy, and socio-economic status of the customers [179]. The literature reviews also found rural pharmacists were interested in innovative roles and delivered a higher level of pharmaceutical care, but in later publications, some authors stated there was no difference in professional service provision [198]. It was stated that if a pharmacy was part of a banner group, independently owned or of a certain size, this was as much a factor in any differences as its rurality, by the 3CPA analysis (Chapter 6) and Berbatis et al. (2003) [40], and also confirmed several years later by Guirguis et al. (2017) [194] and Stewart et al. (2018) [198].

However, overall, the statistical analysis of the smaller studies, with small numbers of participants, was often basic without controlling for confounding variables. For larger studies, examining rural differences was not a priority.

Interviews, evaluation data analyses and surveys conducted

Key opinion leaders (Chapter 4) were asked for their views and suggestions of the differences between rural and urban community pharmacy practice, as well as their opinions on the future, work practices, influences and barriers within the profession. The leaders chosen were from a mix of backgrounds and experiences, and there was no obvious consensus from these practitioners, but many held strong opinions. Never-the-less, these practitioners were the key opinion leaders of pharmacy in Australia at the time the initial interviews took place (2008–2010). However, it was found that often these opinions voiced were not specifically about rural practice, but rather about the profession as a whole, for example, the lack of a seat at the national table when health policy is discussed and developed.

The particular rural interviewees in Chapter 4 liked rural practice, enjoyed the innovation, and adaptation that seemingly came with it, and the associated lifestyle of a rural area. All felt that there was more interprofessional collaboration in rural areas, but overall there was still a sense that others do not know what a pharmacist was capable of professionally, and there was still a distinct lack of local teamwork. Added to this overall, in Chapter 4 was the impression that pharmacy was not included in plans, committees and decisions in various levels of health care policy across this country, as confirmed by data presented in Chapter 2. Comments were made about the restrictions on practice by the CPAs, which essentially dictate community pharmacy funding and practice. They felt pharmacists usually did not, or could not charge for professional services, and these services should be at the particular industry standard, in order to support the value of pharmacist input in patient care. The role of some professional organisations within pharmacy was questioned. Interviewees thought that overall, there had been a lack of change within the profession over time (Chapter 4).

In the second set of interviews with key opinion leaders, in 2016 (Chapter 4), some additional changes had occurred, but many themes were the same, despite the time difference between interviews. Customer service expectations, expanded practice, the pharmacy culture and teamwork with other health professionals were still identified as issues for all practitioners, not just those in rural practice. Overall, the comments did not shed any new light on the differences in rural community pharmacy practice, in the two sets of interviews, just inconsistencies in opinion within the profession as a whole.

Another set of practitioners interviewed, had participated in the PAART study (2013) [203] (Chapter 5). Interviewed in 2009, the matters of concern for these practitioners were more day-to-day practice issues, the authority of the CPAs, which practitioners felt directed their own practice, and the influence of discount pharmacy. Customers were the primary focus, and any practice change could not affect this relationship, or business viability would be at risk. The pharmacists here also thought rural customers were more willing to sit and listen, than were the urban customers. Although these opinions were based on the PAART study, they were confirmed in the findings from the literature review [186, 190, 193] and by key opinion leaders (Chapters 3, 4).

Many studies into wider roles for pharmacists, either in current or potential community

pharmacy practice, were conducted in either rural, or a mix of urban and rural environments. For some, this may be because of the funding source, using for example, the rural research funding provided as part of the earlier CPAs [33], which specified funded projects were to be conducted in rural or remote areas. Other studies contained subjects within a variety of geographic locations, without any indication of this data being used for any comparative research, such as those papers found in the systematic literature review (Chapter 3) or as background in the PAART study (Chapter 5). This approach to using mixed rural and urban data together for analysis had not altered over the time range for the literature review.

Data from the CPA QCPP evaluations from two agreements (3CPA and 4CPA) (Chapter 6) was also obtained, and additional analysis conducted to investigate for any differences in urban and rural community pharmacy practice. The rural ranking for each pharmacy location was checked, and adjusted for both evaluations and then altered if need be, to reflect the PhARIA ranking of the time.

The 3CPA QCPP evaluation, by the pharmacists, found that a statistically significant proportion, 83% of rural pharmacies, considered two-thirds of their customers to be regular, compared with only 63.4% of those pharmacies in PhARIA 1 areas. It was found that significantly more PhARIA 1 pharmacies solved problems presented to the pharmacy ($p<0.01$), than did rural pharmacies. In the area of professional services, statistically more PhARIA 1 pharmacies delivered 'nutritional services' ($p<0.01$). It was also found that there was no statistically significant difference between urban and rural pharmacies for the delivery of other professional services, such as those for hypertension or asthma.

The 4CPA data from Chapter 6 comprised of 36,668 customer responses to a survey handed out by pharmacy staff, or were made available in the pharmacy itself, for self-selection. Again, a comprehensive re-organisation of data was required to ensure the rurality of respondents was correct, in what was provided by the original investigators. The PGA chose to promote that 95% of customers trust and appreciate their pharmacy [95] after this report was released. No differences in rural and urban pharmacy customer opinion could be found in any sub-analyses of this data. Unlike the 3CPA data, these rural respondents were not more likely to have a regular pharmacy compared to

the urban counterpart cohort. This could be due to the surveys being handed to regular customers at the pharmacy, and no random consumer selection. Rural consumers in this survey also thought that their rural pharmacists had significantly more knowledge ($p<0.05$), compared to what urban consumers however, this was a marginal result in absolute terms. No other statistically significant results were found for differences in service provision or practice.

The PCHCM (2005) (Chapter 7), which was rurally funded, used both rural and urban participants. It developed a model for CVD care in the pharmacy, using a series of different investigations during the course of the project. Within the total of 505 consumers' responses, from a telephone survey, there were equal numbers of consumers with, or without CVD, and a substantial proportion of rurally-based participants, once the data had been correctly adjusted for geographic location consistency. Customers with CVD were more likely to ask their urban pharmacy for lifestyle ($p<0.00$) or prescription dispensing advice ($p<0.00$). Significantly, more consumers with CVD from rural areas thought their pharmacy was capable ($p<0.00$) of providing a service for hypertension screening, but there were no significant differences on likelihood of patronage of this service. Despite over 80% of consumers overall believing that their community pharmacy was capable of providing a lifestyle service, the trend was that rural consumers with CVD were less likely to use this compared to those without CVD. No statistically significant differences in results were found for other professional services. It should be noted, that a reasonable number of consumers did not have an opinion one way or the other, and were classed as ambivalent about the provision of additional professional services. In 2005, only about half of the consumers thought they would use pharmacists' services for drug monitoring and prescribing, an area of practice occurring overseas [188] at the time, and now in some practice settings of Australia.

In 2013, a report by an independent group in Australia, the Grattan Institute, suggested a widening of pharmacy services [55]. Similarly, a project in Queensland used a rural pharmacist as a health generalist [225], as examples of potential role changes for pharmacists. However, pharmacists interviewed and surveyed in this thesis thought that any change was limited by the CPA, because it is controlled by Government funding, rebates for services and ultimately their own community practice and income. The

major influence on the profession here was the PGA itself, because of its relationship, and its negotiations with the Commonwealth Government for the CPAs and the consequent funding distribution (Chapters 4, 5 and 7).

As funds have already been allocated for programs within the CPA, the pharmacists themselves would have to promote and charge for any additional professional services. The pharmacists in the studies for this thesis, although interested in practice change, had a limited belief in this occurring (Chapter 7) and were not confident in charging for their services (Chapters 4, 5 and 7). Pharmacists from the Current and Future Practice Survey (Chapter 7) would prefer professional services to be reimbursed by the Government rather than charge customers, thus reinforcing this lack of confidence in their own ability, to provide a service that was worth charging the customer, and one which the customer would be prepared to pay. In the PAART project, pharmacists in a written evaluation survey [203] suggested the cardiovascular service provided was worth charging the patient. The pharmacists indicated that they would charge AUD$1–5 (median) with a range from AUD$0 to AUD$6–10 per session (for up to 30 minutes) but did not have the self-assurance to charge when asked in the face-to-face or phone interview (Chapter 5). The charges suggested here are less than wages, and not congruent with other health professional service charges.

Using the Duckett et al. (2013) [55] suggested charges for services, with the estimated time allocations of 15–30 minutes, was investigated by the survey in Chapter 7. It was interesting that again, no pharmacist suggested these charges were too low for any health professional to demand (a range of AUD$12.10–AUD$18.65 for up to 15–30 minutes of time). Currently, pharmacists have no ability to claim for any service through Medicare in Australia, and if there was no existing program within the CPA, direct charging of the patient is the only option for recouping money for the service provided. Although a few pharmacists in the Current and Future Practice Survey (Chapter 7), thought the wider roles in vaccination and disease state management should be for rural pharmacists only, overwhelmingly, pharmacists thought this should be an opportunity for all practitioners. It should be noted, however, that numbers in this survey were proportionally small, compared to the current number of practitioners in Australia.

The community pharmacy model in Australia is also a barrier for change. An emphasis on dispensing, and the accompanying counselling, and use of the usual single practitioner model, does not enable one pharmacist to engage comprehensively in additional professional services. Pharmacists in the survey identified an expectation to include professional services into current work structures, but also noted a distinct lack of wage increases over time (Chapter 7). As this wage increase could be one measure of acknowledging the expertise required for this activity, pharmacists were reluctant to add more undertakings to their busy work life. The issue of wages will be discussed further, later in this chapter.

Minor and inconsistent differences only, were noted for practice in rural areas despite extensive research and analysis of the various data obtained and examined for this thesis. It is therefore postulated, that essentially over this time period, the practice is the same, but the geographical context is different. The systematic literature review undertaken found that there were very few studies in this overall area from the searchable literature, the earliest found was 1993.

Although not specifically about rural practice, key opinion leaders expressed frustration at the lack of professional services and pharmacy industry change. Many of the pharmacist participants indicated that they wanted to see change, deliver more professional services and be regarded as an integral member of the health care team. However, these pharmacy practitioners were unsure how to progress this change, and if they had the capacity and imprimatur from the pharmacy owner. Overall any change that is conducted must ensure that any pharmacy businesses would be viable.

The lack of customers' experiences with, and support for professional pharmacy services was indicated in the consumer surveys and the literature review. Data analysis, supporting Heffernan's views [96] that suggest customers' experiences shapes their expectation of practice. Strong relationships with regular customers and doctors were reported as facilitators for a higher level of pharmaceutical care in Sisson's et al. USA study [185] (Chapter 3, 4 and 5). However, this was not supported by the findings of the studies in this thesis when practitioners were asked if relationships would improve or deteriorate if professional services were introduced into the pharmacy (Chapter 7). For this Australian survey the response was small, and further investigation is needed to

confirm if these findings were similar to those found overseas.

Other forms of pharmacy practice as previously discussed (Chapter 2) may be an option in some geographical areas if professional services were not practical or possible in a community pharmacy setting. A focus of this future research would ascertain if any further differences exist in the relationships between health professionals and customers with pharmacists in regional, rural and remote practice locations. More research is needed to find if rural community practice is indeed 'different'.

- ***What are the implications and significance of these differences for development, support and implementation of new programs for rural community pharmacy practice?***

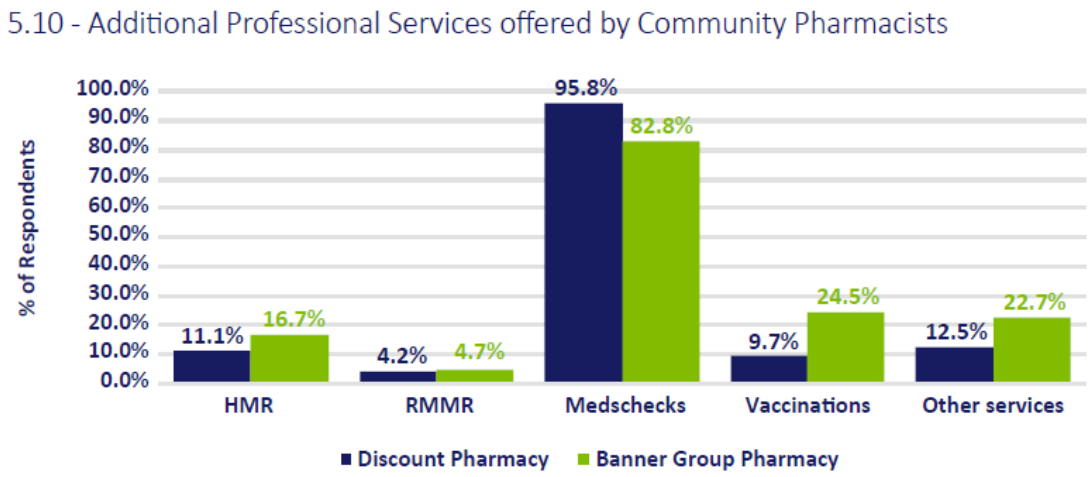
In Australia, pharmacists themselves do not usually instigate any professional programs of significance, other than those found under the QCPP. The exact nature and detail of many individual programs is unknown, and was not found in the published literature. As mentioned, pharmacists would prefer payment from the Government and were reluctant to charge the consumer, at a rate commensurate with the time undertaken as a health professional, for fear of losing custom and business (Chapters 5, 7). Rural pharmacists were more likely to spend longer with patients for less remuneration (Chapter 7).

The pharmacist survey respondents in Chapter 7, suggested a number of increases in what was then, the upcoming 6CPA, with the lowest increase being for Rural Support Programs. Although rural pharmacists were part of this respondent group, this lowest increase would suggest an inferior knowledge of the depth, variety and scope of various components funded within this particular program.

Few respondents in this survey thought the professional programs, such as vaccination services or disease state management, should only be available for rural pharmacists. Respondents also suggested that the actual pharmacist performing the professional service should receive the payment, not the business owner (Chapter 7), a major shift in the current Australian funding approach. The majority of professional programs today are MedsChecks, according to the PPA (2018) [226], with 'other services' only undertaken by 12.5% to 22.7% of employed pharmacists as shown in Figure 8.1 below. This contrasts with other statistics and information previously found in Chapters 6 and

7 showing the prevalence of a variety professional services. These previous investigations did use data before MedsChecks were instigated, however it is interesting to note the proportion of supply of this service compared to the many other professional services noted in other chapters (Chapters 3–7).

Figure 8.1: Additional professional services offered by community pharmacists 2016–7



Community pharmacist employment and remuneration report 2016/17, PPA, 2018 [226]

Lack of pharmacy involvement in policy, rural policy and frameworks

Pharmacy, as a profession, has not been at the forefront of many health, and in particular rural health policy, and frameworks and, if included, it is mentioned in minor ways, relating to the community pharmacy shopfront. Community pharmacy is mentioned as somewhere to get a prescription filled or an OTC product or service (Chapter 2). A review of rural policies and documents over the past 25 years, showed the roles of nurses and doctors were more prominent, and at the forefront in these various papers and reports. There also was a lack of inclusion in the past, and now in current Government funded bodies such as the PHNs.

Community pharmacy is essentially managed under the CPA and this, in turn, dictates pharmacy practice. Pharmacy as a profession does not appear to have used this lack of inclusion in policies and frameworks to argue for additional services or funding provisions. Although individual practitioners might provide various services, this has not transferred to inclusion or widespread change within the profession itself, whether this be in rural or urban community pharmacy.

Lack of definition of professional services in the literature

Papers in the systematic review for this thesis, examined if a service was provided or not (Chapter 3). As previously suggested, the level and details of the service was not described in the various papers in any of the literature searched. This was reinforced by the investigations into the 3CPA monitoring and clinical service provision (Chapter 6), the PCHCM (Chapter 7) and the National Pharmacy Database (2003) [40] data. Although some of this data would now be considered as old, it was still relevant for comparative purposes and can be useful to review any practice changes over time.

It is suggested that the professional services mentioned elsewhere in this thesis, range in complexity from a simple opportunistic blood pressure reading to a comprehensive disease management service complying with the current version of the Professional Practice Standards (version 5) (2017) [62]. However, any data and papers found did not differentiate between these two actions, and tended to describe them as the same clinical intervention service. This also confuses consumers, as their opinion of the prevalence of some pharmacy services did not match the pharmacists' opinions and consumers thought pharmacies conducted more services, than the pharmacists did, but not in all cases (Chapters 6, 7).

An example of this confusion is the website of Buderim Pharmacy (2018) [227], and how it describes it's 'Blood Pressure Monitoring Service':

> At Buderim Pharmacy we offer complimentary blood pressure testing every day of the week and no appointment is necessary. [227]

From this description, there were no details as to the full extent of the service. One cannot assume the multifaceted approach described by the following pharmacy organisations matches this current practice. The GuildCare programs protocol for Blood Pressure (2015) [228] includes screening, monitoring, recording, interpreting and discussing the blood pressure readings taken, relevant information given and referral if necessary. This protocol is used in conjunction with the following QCPP Checklists: Disease State Management Service Checklist, Screening and Assessment Checklist and the Equipment Calibration/Maintenance Schedule and Record (2016) [229]. This service should also comply with the PSA Professional Practice Standards (version 5) (2017) [62] on disease state management:

The pharmacist supports the patient to develop and, where possible, take responsibility for their healthcare plan. The pharmacist raises awareness of the risk factors associated with chronic disease states, and works with members of the healthcare team to facilitate patient health and wellbeing. [62]

Figure 8.2: Disease state management—PSA professional practice standards, version 5

Professional practice standards, version 5, Pharmaceutical Society of Australia, 2017 [62]

Figure 8.2 above shows the extensive list of criteria essential to successfully adhere and practice to an acceptable professional level of patient-centred care in Australia. Also incorporated into a community pharmacy blood pressure service, should be the following professional standards: Fundamental Pharmacy Practice, Health Promotion and Education, Collaborative Care and the Screening and Risk Assessment Standards.

Another professional service previously mentioned with unclear details as to the exact nature of the service was one for nutrition or weight management (Chapter 2, 4–6). This could be classified as vitamin sales, food supplements or a complex professional service provided by the pharmacist. From the previously data shown in this thesis and the examples provided above, definitions of service do not appear to be consistent in

community pharmacies in Australia.

Secondary Questions:

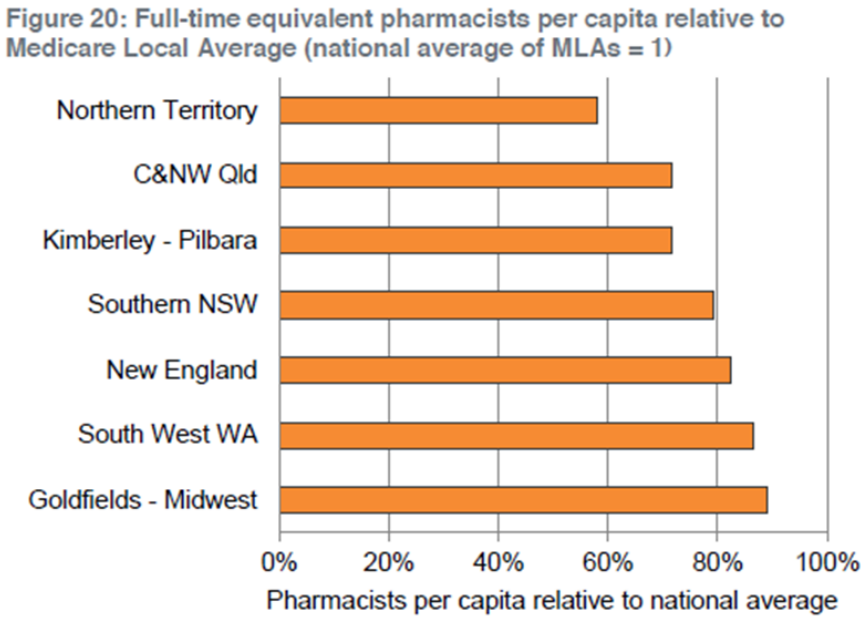
- ***What are the influences in rural pharmacy practice today?***

It appears that the main reason people practice in rural areas is because they want to, and the rural context and its associated lifestyle is paramount, but not because of any perceived difference in community pharmacy practice. Pharmacists' personality, family proximity, culture, gender, generation type, and practice requirements may affect their employment choices. The influences in rural practice were found to be those in any community pharmacy: the practice, customers, practitioners, owners, professional organisations and the government.

The current model of a single practitioner practice can restrict participation in the many professional services, which could improve pharmacy business and customer health. With support, both remuneration and time, involvement would improve practitioner knowledge and skills, job satisfaction and thus keep community pharmacists in pharmacies, wherever the location. This is fundamental to practice, not location.

Another example found in the Australian literature, also might influence the pharmacist's potential to practice and take advantage of specific rural funding opportunities. This also highlights the anomalies within the current rural classification schemes. The Grattan report (2013) [55] suggested extended health services, to alleviate shortages in which there was limited access to GPs, and should only be available in 7 identified locations in Australia. These areas were New England (Armidale, Tamworth), Southern New South Wales (Queanbeyan, Goulburn), and central and northwest Queensland (Mt Isa), as well as the Northern Territory and most of Western Australia, using the Medicare Local Area data of the time for their calculations. It was suggested that 1 in 20 Australians were affected by the lack of GPs in these areas. Unfortunately, as shown in the report, the number of pharmacists in these areas was low as well (Figure 8.3). An increase in pharmacist services assumed adequate staffing, but the number of full-time equivalent pharmacists in these areas is much less than 100%, as shown below. The lowest numbers of full-time equivalent pharmacists were in the Northern Territory, with just under two-thirds, compared to the national average.

Figure 8.3: Pharmacist numbers per capita in identified low GP serviced areas



Source: Grattan Institute analysis based on ABS data request

Access all areas: new solutions for GP shortages in rural Australia, Duckett et al., 2013 [55]

According to the 2013–4 PhARIA data [25] (appropriate to the time of the report), the New England areas of northern NSW which contains the towns of Armidale and Tamworth, were ranked PhARIA 1. Thus, these areas would be excluded from any CPA Rural Support Program funding opportunities and consequently any practitioner support. Other areas also with this PhARIA 1 rating were Queanbeyan (ACT) and Goulburn (southern New South Wales). If another rural ranking scale was used, such as the ASGC–RA rating scale, all except Queanbeyan were RA2 (Inner Regional) i.e. 'rural'. Urban Queanbeyan, the exception, was ranked RA1 (Major Cities) (2018).

If the Modified Monash Model (MMM) [20, 21] for area classification was used the following differences are noted for the geographical locations for the key opinion leaders. Compared to the PhARIA ranking scale used for funding in the community pharmacy profession, many of the interviewees are based in regional or rural non-metropolitan areas which still have a PhARIA 1 ranking. Since the MMM [20, 21] scale was only released in 2015, it could only be used for the second round of key opinion leader interviews. Using the current MMM rankings, the following classifications emerge:

Table 8.1: Pharmacist key opinion leader interview list: Interview series one and follow-up series: Addition of rural ranking scales

Code	Role at time of initial interview	Role at time of follow-up interview	PhARIA work base	Modified Monash Model Scale (MMM) work base
S1	Key pharmacy opinion leader and academic, drug regulatory body representative, pharmacist	Same role as listed for the initial interview	1	1
S2	Past Chair AACP, accredited pharmacist, PSA committee and national representative, community pharmacist and rural pharmacy owner	Clinical pharmacist, accredited pharmacist, rural pharmacy owner, educator, PSA national committee member on policy and the profession	1, 5	2, 5
S3	Rural opinion leader, rural community pharmacy manager, PSA rural spokesperson	Rural opinion leader, rural community pharmacist locum, HMR, RMMR, QUM pharmacist, PHN pharmacist	1	2
S4	PGA representative, pharmacist	ACP representative, pharmacist	1	1
S5	NPS Facilitator, accredited pharmacist	NPS MedicineWise Clinical Services Specialist (expanded role), accredited pharmacist, tutor School of Medicine for medical students	1	2
S6	Past Chair NAPSA, pharmacy student	Community pharmacy owner (PhARIA 1 but in a rural/regional location)	1	1
S7	Community pharmacist and rural pharmacy owner	Same role as listed for the initial interview	1	3
S8	SHPA rural spokesperson, rural academic, rural hospital pharmacist	Rural and pharmacy academic, rural hospital locum pharmacist, educator	1	3
S9	Rural pharmacy group owner, pharmacist	Unavailable. *Not interviewed for follow-up series	1	
S10	Head of School, School of Pharmacy (not Tasmania), pharmacist	Same role as listed for the initial interview	1	1

Code	Role at time of initial interview	Role at time of follow-up interview	PhARIA work base	Modified Monash Model Scale (MMM) work base
S11	Past pharmacy owner, business lecturer, PSA branch director, pharmacist	Same role as listed for the initial interview	1	1

A ranking of MMM 2 under this scale is classed as large regional, i.e. towns within 15km of a town with a population of greater than 50,000; MMM 3, medium large regional, 15km to a town with a population between 15,000 and 50,000; MMM 5, small regional, other areas within Category 2 and 3 of ASGC-RA areas with populations of 5,000 to 15,000 not covered by other categories [21].

The current rural pharmacy PhARIA classification, and limited opportunities for practitioners within the Rural Support Program, thus hampers practice change. The use of other rural classification models, such as the Modified Monash Model [21] would allow an expansion of the funding to reflect the true regionality and rurality of Australia.

Many extended roles have been suggested for pharmacists in publications such as the Grattan report [55], and other literature [135, 176]. It is of note that extended roles for rural pharmacists were suggested when there was a lack of another health professional in the area. It was assumed that the pharmacists could gain another professional skillset, rather than practice to the full extent of their own profession's current expert standards.

- ***What knowledge and skills define rural pharmacy practice today?***

An answer to this question was not found, in that there was insufficient evidence of rural community pharmacy practice being distinctively different, when compared to urban practice.

- ***What are the implications on recruitment and retention of pharmacists in rural areas?***

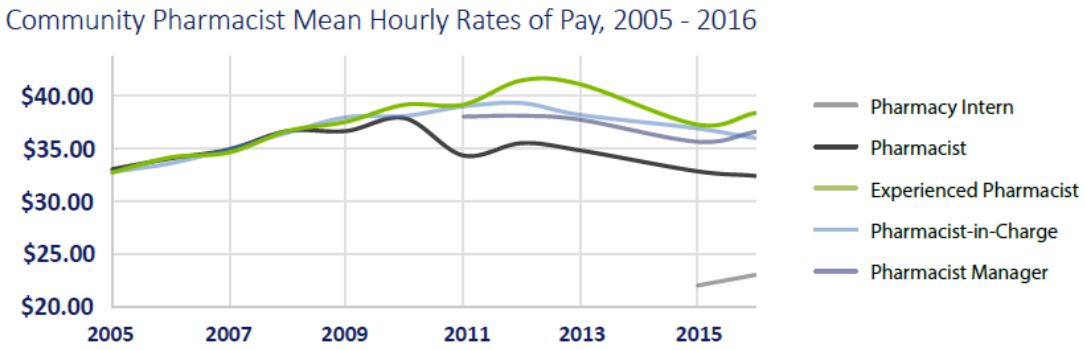
Despite many recruitment and retention strategies, educational and funding sources, none has effectively altered the number of pharmacists in rural areas. Some areas do

not have the staff shortage cited a few years ago in the first round of key opinion leader interviews (Chapter 4), but other areas still cannot attract pharmacist staff (Table 2.6). This later data is based on those who advertise, and may not include those who use other means, such as word-of-mouth, or professional e-bulletins. It would also not include those employers who might have given up on finding additional suitable staff. Without suitable staff, no practice change could be contemplated.

Currently, there is little financial incentive to the employed pharmacist, other than that offered by the pharmacy itself, to work in a regional, rural or remote area of Australia. Most monetary support goes to the owners (Chapters 2, 7), and is not always passed on [226]. If the pharmacist was not an Australian citizen or permanent resident, inducements under the CPA Rural Support Programs (2018) [23] are also restricted, thus hindering recruitment and retention. Monetary inducements in the past were not seen to translate into long-term staff retention (Chapter 2).

Wages, or lack of any increase, was mentioned by pharmacists in the interviews and surveys of this thesis (Chapters 4, 5, 7). This was not an issue specifically related to practicing pharmacy in rural areas, but worthy of note. It was a point of concern for both the men and women in the PPA annual employment and remuneration report (2018) [226], using data supplied by 658 survey participants. Only 8% of pharmacists delivered professional services with personal additional remuneration. Pharmacists recorded that there had only been a 0.5% increase in wages in the past year (2016/7). This sentiment concurs with comments from practitioners in Chapter 7, who stated that there was a lack of pay increase, yet there was an expectation to undertake professional services in an already busy day. The PPA found that poor pay and stress were the major issues causing unhappiness at work.

Figure 8.4: Community pharmacist rates of pay 2005–16



Community pharmacists employment and remuneration report 2016/7, PPA, 2018 [226]

The graph above (Figure 8.4) from the PPA report (2018) [226] shows the mean hourly rate for a pharmacist-in-charge, in 2016, was AUD$35.95 per hour, compared to approximately AUD$33.63, 10 years prior, an increase of 6.4% over the whole period. It is suggested that this is less than the Consumer Price Index (CPI) which had a 2% increase in a single year, in 2017/18 (2018).

This report, and other responses from surveys undertaken for this thesis, found many practitioners were disillusioned with the profession. This being the case, in this author's opinion, it is understandable that practicing in a relatively comfortable urban environment would be preferable to one that is unknown, and away from family, personal, and professional support networks in rural and remote areas. Pharmacist participants in the various studies stated that recruitment of pharmacists to rural and regional areas was difficult, despite the employment evidence not corroborating this assertion [133]. Both key opinion leaders and pharmacist practitioners believed that job satisfaction through delivery of professional services may assist with the recruitment and retention of graduates. Opportunities to practice in extended areas professionally, may invigorate the pharmacy as a profession and thus keep graduates and current practitioners from finding other positions and careers.

- ***What are the implications for undergraduate and postgraduate training?***

The training and support for undergraduate programs enacted since the 3CPA, at University level, have not altered the number of registered pharmacists seeking rural employment. There is some training apparent during undergraduate courses regarding

rural health, but not necessarily anything to prepare undergraduates for rural or remote practice beyond a possible placement for some and an understanding of the health differentials. The Rural Support Program within the various CPAs provides Australian or permanent resident students with an allocation towards a placement in a rural area, usually one that does not cover the actual cost of the placement. Not available for all, and despite many positive aspects, it could be assumed that out-of-pocket expenses could diminish this experience somewhat.

Although there has been a 2.4% increase in generally registered pharmacists in the past year, there are still shortages in regional areas in some states of Australia (Chapter 2). In 2017, these were Queensland, South Australia, Northern Territory and Tasmania, but for other states and territories, it was interesting to note that there was no regional shortage reported (2018) [133].

The Rural Support Program (Chapter 2) has been part of the CPA for over 20 years, but clearly, the monetary strategies undertaken so far have not successfully addressed or impacted on these shortages to date. A publicly published evaluation of all aspects of the Rural Support Program over this time, would be of value to confirm these assumptions, and provide insight into potential changes that could be made to improve the future.

8.2 Limitations

The overall limitations of the studies are listed:

1. There was a small number of interviewees within the qualitative analyses components of this thesis, but this allowed for in-depth analysis of the transcripts. A senior representative from a discount pharmacy group was not included in the cohort. There were no pharmacists interviewed who practiced in remote regions (PhARIA 6), but there were key opinion leaders and PAART pharmacists who practiced in PhARIA 5 areas.

2. The two QCPP survey data was de-identified, meaning some assumptions had to be made to classify the data into rural and urban locations. Pharmacy staff opportunistically selected 4CPA customer survey respondents, which may have introduced some bias into the respondent group.

3. The PAART pharmacists were a purposive group, and thus could have opinions which were not representative of all rural and urban pharmacists.

4. The numbers in the Current and Future Practice Pharmacist Survey suggested a very small proportion of potential respondents, which could in turn have provided a skewed opinion of community pharmacy practice. However, the data did reflect the makeup of the workforce in practice in Australia at the time. Pharmacists from all geographical areas were represented in this small cohort.

5. The age and types of the data collected could be classed as limitations or strengths, thus enabling comparisons to be made over time.

Chapter 9: Conclusions and recommendations

To revisit, the overall aims of this series of studies were to:

- investigate perceived differences between rural and urban community pharmacy practice
- propose suggestions on how some of the perceived disparity could be addressed

The following conclusions and recommendations have been drawn from the literature reviews, and the results of the interviews, surveys, and various data sub-analyses. A lack of both data, and studies from the literature, were found to be evident during the research, and hence some conclusions suggest approaches to rectify this knowledge gap.

9.1 Conclusions

1. The investigations showed there was a lack of comparative data between urban and rural pharmacy regarding day-to-day practice, both in Australia and internationally. No substantial differences and evidence were found, even though various methods were used: interviews, surveys, analysis of unpublished Australian data sets, and the literature.

2. This research has showed that:

Key opinion leaders suggested that there were:

- Some practice differences because rural pharmacists knew their customer base and had had better relationships with local health practitioners.

Rural practitioners suggested:

- The pace, lifestyle, customers and collaborations with health professionals were the differences.
- They were prepared to provide more professional services for less remuneration, and spend a longer time with customers.

The literature and studies showed:

- Rural pharmacists had a greater number of regular customers compared to urban pharmacies and spent more time talking and initiating

conversations.

- There were more professional services provided in rural areas, but then an explanation was given to diminish the statistical evidence, suggesting the pharmacy size and banner group membership were the reasons for the differences, and not the location.
- Suggestions were made for additional rural pharmacist professional activities when there was a lack of other health professionals, not activities that were an extension of the current pharmacist skillset.

3. It was suggested that collaboration with other health professionals was greater in rural areas from practitioners and key opinion leaders. The lack of partnerships with other local health practitioners was demonstrated by the degree of uncertainty about health practitioner relationships, should some professional services be introduced in the pharmacy. This need for collaboration was reinforced, by the absence of pharmacy involvement with national and local health policy.

4. Pharmacists were reticent to charge a realistic rate for time taken to deliver professional services, and would prefer the Government to reimburse the pharmacy. This showed that a professional service paid by the consumer is not yet acceptable to many pharmacists. They were concerned that custom might be lost if payments for service were instigated, as historically pharmacists have not charged for additional advice or consultations. They were prepared to spend more time for less income overall, for provision of vaccination or disease management services.

5. Although pharmacists would like to change their practice in the future, they thought this would not happen; overall, they were uncertain about the future and felt no real change would take place within the profession. Pharmacists were concerned about no improvement in wages or conditions over a number of years, yet there was an expectation by employers to introduce new services within existing practice conditions. Although some were ambivalent, pharmacists were interested, had confidence and enjoyed the

provision of new professional services, but were concerned about the time taken, considering the requirements of their already busy roles. The current models of single pharmacist practice do not allow for many professional services given the other activities such as dispensing, counselling and OTC sales and advice. There was no difference in opinion wherever the pharmacist practiced.

6. It was found that there was a lack of definition around what a professional service in the pharmacy entails, using the data examined, thus hampering accurate comparisons:
    - Surveys used only the words, e.g. provision of a 'Blood Pressure Service' to gauge the extent of service provision. There were minor differences in types of services provided in rural and urban pharmacies, however without a detailed service definition, and the consistent use of minimum professional standards, this result is hard to validate.
    - It is suggested that that not all pharmacies may follow all the GuildCare [228] or Professional Practice Standards, version 5 (2017) [62] and offer a consistent complex and complete professional service in a community pharmacy. This requires further investigation.
    - It would be difficult to argue for more funds for professional services with the lack of evidence currently. The existing nature and depth of the services cannot be identified, and the exact scale of implementation is not known.

7. Consumers and practitioners had quite different ideas on the extent of the availability of professional services within pharmacies. Some rural consumers thought their pharmacy was capable of providing a service, but then were unlikely to use it. They also only had an idea of service based on what was currently available, or what was asked in the surveys, and not the extent of potential complex professional services and the pharmacists' capabilities. More research is needed to accurately map practice and assess acceptable future practice.

8. It was also found that pharmacy does not 'have a seat at the table' when many national, state and local rural health policies were, and are, developed. Consequently, the profession was not mentioned as a significant 'player' in rural health, other than the community pharmacy as a place where prescriptions can be dispensed, and some primary health care services provided. Measures must be undertaken to address this disparity, as a community pharmacy is a health provider of many types of professional services, independent of those supported and restricted by the CPAs.

9.2 Recommendations

The following recommendations have come from this research:

- More comprehensive research is required in all areas of practice, to clarify the disparities found in beliefs of the practitioners, customers and professional associations on apparent differences in current rural community pharmacy practice. This is not just an Australian phenomenon.

- Only professional services that adhere to all the aspects described in the current professional organisations' practice standards should be entitled as such in community pharmacies.

- The profession should accept payment for professional services, whether the service be in part paid by the CPA, by the Government or a charge levied in pharmacies or other practice locations, by individual practitioners.

- There is a strong case for better remuneration and conditions for all pharmacists to enable a competent and sustainable workforce. New funding models should allow for those who travel to and from urban settings to practice in rural areas and are not covered in current funding models.

- A new modelling of suggested pharmacist staff ratios should be undertaken when considering the incorporation of multifaceted complex professional services into day-to-day business across rural and urban practice in Australia.

- The profession and its associated professional organisations should clearly articulate the skill set of pharmacists to promote relevant competent practice at the highest level.

In addition, for rural community pharmacy practice:

- There should be a review of the PhARIA system, to enable those practicing in rural and regional locations to take advantage of the potential training, recruitment and retention opportunities available if, for example, another system was used such as the Modified Monash Model classification to define rurality.

- Other practice models for pharmacist practitioners in rural settings, including those outside community pharmacies, should be supported with long-term funding options not just pilot projects to attract and keep pharmacist practitioners. Ongoing funding would allow these models to show improvement in health indicators for chronic conditions for regional, rural and remote areas of Australia for all populations including Aboriginal and Torres Strait Islanders. Funding may need to come from outside the CPA as this allocation is locked into a 5-year funding cycle.

- More pharmacy/pharmacist involvement is required in rural health policy nationally by pharmacy professional associations, and locally, practitioners must improve their own links with other health professionals. As a profession, pharmacy should align itself with and address the current risk factors identified in national policy documents, especially given the health disparities for those living in rural and remote areas of Australia.

This study and the systematic review found that some rural pharmacists had stronger relationships with their patients and local health professionals. Data was inconclusive as to whether this resulted in improved medication advice and increased pharmacist interventions. This data also did not show if a pharmacist outside the community pharmacy could achieve a difference. This particular investigation would have been outside the remit of this thesis.

Despite rural Australia having a smaller number of pharmacies and less health clinicians per capita, being older and with a higher burden of chronic disease, this research showed limited evidence that rural pharmacies deliver more professional services than their urban counterparts. This research did not investigate the rate of medication misadventure in rural versus urban Australia. It is well documented that rural Australians present later at primary health care services and have higher rates of hospitalisations. Further research is needed to determine whether more professional pharmacy services may assist in the improvement of health outcomes of rural Australians with chronic disease.

Pharmacists are reticent to charge for their services and the cost of delivery of professional services is perceived by pharmacists as a noteworthy barrier to delivery. There are many areas of rural and remote Australia where it is not viable to have a community pharmacy. The lack of community pharmacies in some areas and the lack of professional pharmacy services even where there are rural community pharmacies, may support the need for pharmacists to be employed in settings other than community pharmacy.

The real heroes of this thesis are the rural practitioners, who are often innovative and part of their community, and quietly going about their work, collaborating with local health professions and ensuring the best possible care for their patients and customers.

However, there was little found to substantiate the assumption that rural pharmacy practice is overall different from that in urban areas. This lack of evidence, or at least documentation thereof, potentially jeopardises the profession, professional organisations, teaching institutions and the practitioners in attempting to lever off a 'difference' for funding, recruitment and retention in rural and remote areas of community pharmacy practice.

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Appendix 1: Poster for PSA18, Sydney, 2018.

Pharmaceutical Society of Australia Conference, PSA18, Sydney, Australia, 26-28 July 2018.

Does rural and Urban Community Pharmacy Practice Differ? A Systematic Review

Abstract:

Objectives

Anecdotal comparisons between rural and urban community pharmacy practice have been frequently reported. Therefore, a systematic review was conducted to examine published evidence comparing the nature of pharmacy practice in rural and urban settings.

Methods

A comprehensive literature search was undertaken across 4 databases. The key criterion for inclusion was a comparison of rural and non-rural community pharmacy practice. Definitions of rural used were specific to the country and year of publication.

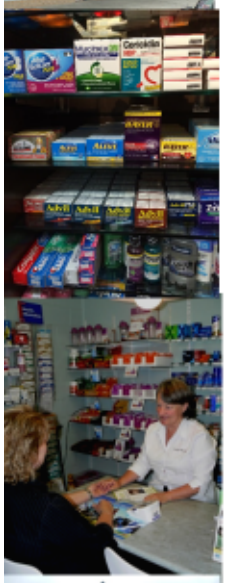
Key findings

From 3830 publications found, 17 included a comparison of rural/regional and urban community pharmacy practice. Studies investigated current or proposed services, and topics included the provision of pharmaceutical care, public health activities and prescribing. It was reported that rural customers were more willing to talk about general health matters, ask advice and talk longer to the pharmacist, but not in all cases. There was limited evidence that rural pharmacists provided more public health or enhanced pharmacy services and appeared to have better working relationships with prescribers. Many of the authors challenged the validity of their own results, suggesting that other confounding factors accounted for the observed differences. In general, the statistical analyses reported were basic, with multivariate analyses being uncommon.

Conclusions

There was some evidence that rural pharmacists were seemingly more willing take on new roles, and deliver a higher level of pharmaceutical care and public health or enhanced pharmacy services. However, this conclusion is based on a small number of studies, often with a limited number of respondents and simplistic data analyses. Further high-quality research is required to ascertain and characterise any real differences in community pharmacy practice between rural and urban settings.





Does Rural and Urban Community Pharmacy Practice Differ? A Systematic Review

Helen Howarth, Gregory Peterson, Shane Jackson

Pharmacy, School of Medicine, College of Health and Medicine, University of Tasmania

Objectives:

A systematic literature review was conducted to examine published evidence of comparisons between rural and urban community pharmacy practice.

Methods:

The systematic literature search was undertaken across 4 databases, up to 28 February 2018, and adhered to the PRISMA Guidelines. The key criterion for inclusion was a comparison, within the paper, between rural and non-rural community pharmacy practice.

Key findings:

From 3830 publications found, 17 papers fitted the key criterion and were from five countries: Australia, UK, USA, Canada and South Africa. These studies included both current and proposed community pharmacy services. The review found that:

- **Rural patients/customers were more willing to talk about general health matters, ask advice and talk longer to the pharmacist. Rural pharmacists tended to initiate more conversations.**
- **There was limited evidence that rural pharmacists provided more professional services, public health or enhanced pharmacy services and appeared to have better working relationships with prescribers.**
- **Many of the authors challenged the validity of their own results, suggesting that other confounding factors accounted for the observed differences.**
- **In general, the statistical analyses reported were basic, with multivariate analyses controlling for possible confounding factors being uncommon.**

Conclusions:

- **There was some evidence that rural pharmacists were seemingly more willing take on new roles, and deliver a higher level of professional services and public health or enhanced pharmacy services.**
- **However, there was little evidence of differences in practice between rural and urban pharmacies.**
- **This conclusion is based on a small number of studies, often with a limited number of respondents and simplistic data analyses.**
- **Further high-quality research is required to ascertain and characterise any real differences in practice between rural and urban settings.**









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Appendix 2: Interview questions series one, key opinion leaders

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Influences, challenges, changes and the future in pharmacy

1. What do think are the major influences of community pharmacy practice?
   Are they, in your opinion, different to those in regional, rural and remote Australia?
   What do you think is different about regional, rural or remote (compared with urban or metropolitan) pharmacy practice?
2. What do you think has been the biggest change during your career in pharmacy?
3. What has been the biggest challenge over the past 5 years for pharmacy in Australia?
   Do you think this would be any different in rural practice?
4. What do you see as the future of pharmacy in community, hospital, consultancy or other pharmacy roles?
   (Prompt: Consider metropolitan, regional, rural or remote areas)
5. What are the biggest influences on the future of pharmacy in Australia?
6. What do you see as the biggest factors holding back pharmacy from its potential over the next 5 years?
   Do you see this being the same for rural pharmacy practice?

Examples of various practice activities were also discussed during the interviews to try to find if there were any different knowledge and skills required for rural or remote pharmacy practice. These were:

Time spent in the dispensary

7. Community Pharmacists spend 75% of their time in the dispensary according to the National Pharmacy Database survey [40]
   Do you have any comment on this?

Professional services

8. 'Enhanced pharmacy services' are also recorded in the same survey.
9. What do you consider an 'enhanced pharmacy service', such as a healthy heart or other disease management service within a pharmacy, would consist of?
   (Prompt: Does it need a pharmacist?)
   Participants were provided with a copy of the National Pharmacy Database Report p. 35, Table D-B7-1: Enhanced Pharmacy Services Offered in Australia's Community Pharmacies [40]
10. There are many current professional programs in Australia.
    What do you consider the facilitators?
    What do you consider are the barriers?

Have you any suggestions how these maybe overcome?

Health promotion and medication adherence examples

11. Using your experiences, what are your thoughts about pharmacists delivering health promotion and medication adherence services?
    Is it their role?
    Are there particular challenges, learning needs etc.?
    How do you see pharmacy contributing to the following activities?
        a. A local Health Expo;
        b. Career Expo at the local High School; and a
        c. Weight Loss Clinic.

    (Prompts: Consider the role of the pharmacist, pharmacy staff, naturopath, local health clinic and the GP)
    Is this any different in rural practice?

Interviewees were then asked if they would like to make further comments.

Berbatis et al. (2003) National Pharmacy Database Table D-B7-1 Enhanced pharmacy services offered in Australia's community pharmacies by trained staff, fees charged and planning in 12 months. (p. 35)

Table D-B7-1 . Enhanced pharmacy services offered in Australia's community pharmacies by trained staff, fees charged and planning in 12 months

(total respondents = 1131; missing = respondents did not tick any of the five possible boxes in the item row/1131)

Enhanced pharmacy service	Missing cases	Does not offer	Enhanced service with trained staff	No charge	Payment	In 12 months
Aboriginal health	14.2%	81.2%	0.5%	2.4%	1.7%	1.2%
anticoagulation	16.5%	74.1%	2.0%	8.1%	<0.1%	0.8%
Asthma	11.3%	43.4%	**14.9%**	38.3%	0.4%	**5.9%**
Body piercing	13.9%	69.6%	**7.5%**	1.4%	**13.0%**	0.8%
Chemotherapy preparation	15.5%	82.0%	1.1%	1.6%	1.1%	0.4%
Community education	15.2%	58.3%	**7.5%**	21.6%	1.3%	**3.8%**
Community clinic + nurses	15.2%	70.6%	4.8%	10.7%	0.8%	**2.7%**
Diabetes	10.1%	41.7%	**17.2%**	38.1%	1.6%	**8.1%**
Discharge for hospital patients	14.9%	70.1%	3.4%	11.2%	2.3%	1.9%
Drug level monitoring	15.6%	79.1%	1.9%	3.8%	1.1	0.5%
Geriatric care	14.5%	56.9%	**9.2%**	9.2%	7.3	**3.0%**
Harm reduction and methadone	10.4%	49.2%	**14.6%**	6.2%	**31.5%**	1.5%
Herbal medicines / nutritional supplement counselling	10.3%	34.0%	**23.2%**	45.1%	3.1%	**3.6%**
Hyperlipidaemia	14.8%	67.3%	4.5%	14.0%	1.5%	**3.4%**
Hypertension	11.8%	44.7%	**13.3%**	36.2%	3.5%	**3.4%**
Naturopathy	14.4%	62.5%	**9.9%**	15.2%	3.0%	**4.7%**
Nutritional support including parenteral/enteral nutrition	15.4%	74.3%	3.3%	8.6%	0.9%	0.4%
Osteoporosis	14.1%	62.5%	6.6%	14%	**6.3%**	**2.8%**
Ostomy counselling	16.0%	81.9%	0.4%	2.0%	0	0.4%
Paediatric pharmacy	14.8%	66.6%	5.0%	16.2%	0.3%	1.2%
Pain management	13.7%	65.6%	4.9%	18.4%	0.4%	1.3%
Psychiatric pharmacy	15.6%	76.5%	1.7%	6.7%	0.5%	0.4%
Skin care management	13.8%	52.9%	**11.1%**	28.5%	1.2%	1.3%
Smoking cessation	8.9%	36.1%	**19.0%**	46.8%	1.5%	**3.8%**
Specialised compounding	16.1%	66.4%	5.4%	8.7%	**6.4%**	1.3%
Weight reduction	12.8%	56.9%	**8.7%**	25.5%	1.6%	**2.1%**
Wound care	11.8%	45.8%	**14.3%**	35.5%	1.3%	**2.7%**
other	86.9%	3.5%	4.2%	3.4%	**5.5%**	0.8%

Appendix 3: Interview questions follow-up interview series, key opinion leaders

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Influences, challenges, changes and the future in pharmacy

1. What do think are the major influences of current community pharmacy practice?

   Can you tell me how they are the major influencers?
   In your last interview you said (personal example from last interview).
   Have any influences changed as you predicted?
   In your opinion, have any influences changed for those in regional, rural and remote Australia?

2. What have been the biggest challenge(s) over the past 5 years for pharmacy in Australia?

   Can you tell me how they are challenges and do you have any thoughts about how the profession may overcome them?
   In your last interview you said (personal example from last interview).
   Have any challenges changed as you predicted?
   In your opinion, have any challenges changed for those in regional, rural and remote Australia?

3. What do you see as the future of pharmacy?

   Would you characterise the future as positive, negative or neither?
   Can you explain why you chose this category?
   In your last interview you said (personal example from last interview).
   Has the future changed as you predicted?
   In your opinion, has this changed for those in regional, rural and remote Australia?

4. What do you see as the biggest factors holding back pharmacy from its potential over the next 5 years?

   In your last interview you said (personal example from last interview).
   Have any of these factors changed as you predicted?
   In your opinion, have any factors changed for those in regional, rural and remote Australia?
   Interviewees were then asked if they would like to make further comments.

Appendix 4: PAART interview questions for participant pharmacists, researchers and project management pharmacists

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1. Introductions
2. What is your current position?
3. What are the activities of your role?
4. What is the role of your organisation?
5. What lead you to this position?

Time spent in the dispensary

6. Community Pharmacists spend 75% of their time in the dispensary according to the National Pharmacy Database survey. Do you have any comment on this?

Professional services

7. Enhanced pharmacy services are also recorded in the same survey. What do you consider a healthy heart management service in a pharmacy would have to consist of?
    a. Does it need a pharmacist?

Participants were provided with a copy of the National Pharmacy Database Report p. 35, Table D-B7-1: Enhanced Pharmacy Services Offered in Australia's Community Pharmacies [40] (Appendix 2)

Health promotion and medication adherence examples

8. After your experience, what are your thoughts about pharmacists delivering health promotion and medication adherence services?
    a. Is it their role?
    b. Are there particular challenges, learning needs etc.?

Influences, challenges, changes and the future in pharmacy

9. There are many current professional programs in Australia. What do you consider the facilitators?
    a. What do you consider are the barriers?
    b. Have you any suggestions how these maybe overcome?
10. What are our professional boundaries?
11. Do any programs overstep professional boundaries in your opinion?
12. What are the major influences of community pharmacy practice?
13. Are there, in your opinion different ones in rural and remote Australia?
14. What is different about rural practice?
15. What has been the biggest change over the time of your career in pharmacy?
16. What has been the biggest challenge over the past 5 years for pharmacy in Australia?
17. How do you see pharmacy contributing to the following activities:
    a. A Health Expo in a rural town;
    b. Career expo at the local High School; and a
    c. Weight Loss Clinic

Consider the role of the pharmacist, staff, naturopath, local health clinic and the GP

18. What do you see as the future of pharmacy in:
    a. Community;
    b. Hospital;
    c. Consultancy;
    d. Other roles; as well as
    e. Metropolitan;
    f. Regional; or
    g. Rural and remote areas.
19. What are the biggest influences on the future of pharmacy in Australia?

PAART 'Healthy Hearts' project

For this project:

20. Do you now have skills in talking to people about diet, physical activity and medication adherence. Do you feel confident?
21. Do you think pharmacies suitable places for this type of advice?
22. Are these services really the remit of another health professional?
23. What do you think is the best model for this type of service?
24. How about for Point-of-care testing in a pharmacy setting?
25. In your opinion what training is necessary for these types of services in a pharmacy setting?
26. Do pharmacists really have to be credentialed to provide these services?

Appendix 5: 3CPA pharmacist survey (second survey)

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Coding sheet—2002 Community Pharmacy Census. [210]

- Where only 1 box should be ticked from a selection, the boxes have been replaced with the code numbers in BOLD. Where more than one box can be selected, enter "1" where a box is selected and "0" if that box is not selected. If no boxes are selected at all for the question, treat as missing.
- Where there is an "Other" category that is not ticked but the respondent has written in a type of "other" then enter the code for "other". If one of the pre–specified categories is also ticked, and only one answer is allowed, then enter only the pre–specified category.
- Only use the codes for "don't know' or "not applicable" where the respondent has actually written these words (includes "N/A") or similar on the questionnaire (except in Q9)
- Note that some missing values will have already been followed up in Canberra so these annotations can be entered as actual data
- Some extra data entry comments fields will be needed throughout the document (see **bold** in data entry instruction column). There should also be a 100–150 character field at the end to capture any other data entry comments or fields for follow-up and cleaning.

QUESTIONS	**INSTRUCTIONS**
Pharmacy ID number—a 4 character numeric field	Enter Pharmacy ID number—please check that all pages have same ID number printed on them.
1. **What is the pharmacy postcode?** ☐☐☐☐	If missing, enter 9999
2. **What is the Pharmacy Approval Number?** *(Write "None" if no approval number)* _____	Alpha numeric code in the form 9999A or if respondent has written "None" or "not applicable" or similar, enter "None" (note that not all pharmacies will have this number. If missing, enter "zzzzzz"
3. **Who completed this census?** Name:_____ **1** Owner/managing partner **2** Non-owner manager	Enter first name (or first initial) and the surname. Please separate into 2 fields. If names are missing, enter "missing" For boxes, enter 8=Not applicable; 9=missing
4. **Where is the pharmacy located?** *(tick the ONE box that best applies and specify if other location)* **1** Strip **2** Neighbourhood shopping centre **3** Medical centre **4** Major regional centre	For boxes, enter 7=if respondent wrote "don't know" or similar; 8=if "Not applicable" or similar written by respondent; 9=missing If 5, then enter text of other specialist location—enter "missing"

5 Other specialist location _____	if "other" ticked but no location given.
5. **What is the pharmacy size in m^2?** **1** ≤ 100 m^2 **2** 101-200 m^2 **3** 201-300 m^2 **4** 301-700 m^2 **5** > 700 m^2	For boxes, enter 7= if respondent wrote "don't know" or similar; 8=if "Not applicable" or similar written by respondent; 9=missing
6. **Is this pharmacy in any banner/brand group?** **0** No **1** Yes If yes, which one?_____	Enter 7="don't know"; 8="Not applicable"; 9=missing If Yes and no banner group given, enter "missing"
7. **What is the gender and year of pharmacy registration of owner/managing partner?** **1** Male **2** Female **1** 1960 or before **2** 1961-1970 **3** 1971-1980 **4** 1981-1990 **5** 1991-1995 **6** 1996 or later	Gender: Enter 7="don't know"; 8="Not applicable"; 9=missing Registration year: Enter 7="don't know"; 8="Not applicable"; 9=missing
8. **How many people own this pharmacy?**_____	Enter number. 77="don't know; 88="not applicable"; 99=Missing (unless these values are found) 000=board
9. **If the owner is NOT the manager, record gender & pharmacy registration year of the manager?** **8** Not applicable **1** Male **2** Female **1** 1960 or before **2** 1961–1970 **3** 1971–1980 **4** 1981–1990 **5** 1991–1995 **6** 1996 or later	Manager's gender: Enter 7= "don't know": 9=missing. If data is missing and "owner/managing partner" ticked in Q3, enter 8=not applicable Manager's Registration year: Enter 7= "don't know"; 8="Not applicable"; 9=missing
10. **Is the manager medication reviews accredited?** **0** No **1** Yes Highest pharmacy qualification?_____	Enter 7="don't know"; 8="Not applicable"; 9=missing Record highest pharmacy qualification: If none, enter "Missing"
11. **How many hours is the pharmacy open each week?**	Enter hours using decimal places i.e. 54 ½ entered as 54.5. Enter minutes as decimal fraction of an hour e.g. 54 hrs 30 mins as 54.5. 999=missing. Make a field **Comments1** here to record any explanations (50 characters) Note: Re Q11: for hours with 2 decimal places have entered .3 for .25 and .7 for .75
12. **On average, how many prescriptions are dispensed per week by this pharmacy?** **1** ≤ 300 **2** 301–800 **3** 801–1200 **4** 1201–2000 **5** 2001–3000 **6** > 3000	Enter 7= "don't know"; 8="Not applicable"; 9=missing
13. **For each staff type, what is the usual staffing level at**:	Enter number of staff in each category at each time period. If any staffing details recorded but some

<table><tr><th>Staff type</th><th>Peak</th><th>Off Peak</th><th>Total hrs/wk</th></tr><tr><td>Pharmacist/s</td><td></td><td></td><td></td></tr><tr><td>Dispensary Asst/s</td><td></td><td></td><td></td></tr><tr><td>Pharmacy Asst/s</td><td></td><td></td><td></td></tr></table> Off Peak 2 chars allowed—decimals .5 or over rounded up. Total hrs/wk decimals—0.5 or over rounded up	table cells left blank, enter "0". If no cells have data, then treat as missing and enter "99" in each field. 77=not applicable NOTE: this column will be added in the second mail out. Telephone follow–up has been done to find out some of this information for forms already received. This information has been added in red. Please enter the annotated information where it is available. Add any explanations or problems in the **Comments2** field.
14. Please indicate the number of non-pharmacist staff at each of the following qualification levels: <table><tr><th>Level</th><th>PGA qualified</th><th>Non-PGA equivalent</th></tr><tr><td>Certificate I (Grade 1)</td><td></td><td></td></tr><tr><td>Certificate II (Grade 2)</td><td></td><td></td></tr><tr><td>Grade 3</td><td></td><td></td></tr><tr><td>Certificate III (Grade 4)</td><td></td><td></td></tr><tr><td>Dispensary Assistant Course</td><td></td><td></td></tr><tr><td>Not yet trained</td><td></td><td></td></tr></table>	Enter number of staff in each category at training level. If any staffing details recorded but some table cells left blank, enter "0". If no cells have data, then treat as missing and enter "99" in each field. Make a **Comments2** field here to record any explanations (50 characters) for Q13 and Q14.
On a usual full working day in this pharmacy:	
15. Approximately how many people sought advice from a pharmacist about their health? _____	If a range is given e.g. "15-20" enter a midpoint value e.g. 17 then record the actual range in an extra **Comments3** field here (50 characters) e.g. "Q15 15–20". Record any ranges given for Q16 in this field and explanatory notes for Q17 here as well. 777="Don't know"; 888="not applicable"; 999=missing
16. What percentage of people seeking advice were: **(a)** Referred to a GP? _____ **(b)** Had their problems resolved in the pharmacy: By the pharmacist?_____ By a pharmacy assistant?_____	If a range is given e.g. "15-20" enter a midpoint value e.g. 17 then record the actual range in an extra **Comments3** field here (see above) e.g. "Q16a 15-20". If "<20" or similar written, enter "20" and write exact details in **Comments3** field e.g. Q16 <20 Note: 5 or over rounded up for all these 777="Don't know"; 888="not applicable"; 999=missing
17. What lifestyle advice or referrals to other health professionals or health services are most frequently given?	Enter free text—annotate **Comments3** field above if writing illegible or text can't be read

Describe _____	If missing, enter "Missing"
Questions 18 to 20 refer to the last financial year (ending June 2001): **18. What was your estimated turnover?** *(tick the ONE box that best applies)* **1** <$1.2M **2** $1.2-1.5M **3** $1.5-2M **4** $2-$3M **5** $3-4M **6** $4-6M **7** $6-8M **8** $8-12M **9** >$12M **19. What percentage of turnover is due to:** (a) PBS/RPBS prescription claims _____ (b) Private prescriptions _____ (c) PBS safety net items not claimed _____ (d) Front of shop sales _____ **20. What is your rent as a percentage of turnover?** **_____%**	Make a **Comments4** field here to record any explanations (100 characters) for Questions 18-20. Turnover: Missing="99"; Don't know="77"; 88=not applicable Q19 Missing=999; Not applicable=888; Don't know=777 Any decimals 0.5 or over rounded up Q20 **One decimal point allowed or if less than 1% 2 decimal places** Missing=999; Not applicable=888; Don't know=777. Record any explanations in the **Comments4** field above
21. Please give ONE phrase that best describes the goals/style of this pharmacy *(e.g. 'Speedy service'; 'customer advice focused'; 'profit focused'; 'develop health care niches'; 'quick to adopt innovation')* _____	Enter text. If missing or illegible, enter "missing" or "illegible"
22. Please write a number from 1 to 7 indicating your agreement with the statement: **"This pharmacy has an entrepreneurial orientation"** **(1=Strongly Disagree, 7=Strongly Agree)**	Enter 1-7 0="don't know"; 8="Not applicable"; 9=missing
23. What percentage of your customers do you regard as regular? **1** up to 30 **2** 30–60 **3** >60	Enter 7="don't know"; 8="Not applicable"; 9=missing
24. How frequently does a pharmacist hand prescriptions to patients? **1** Always **2** Mostly **3** Only when not busy	Enter 7="don't know"; 8="Not applicable"; 9=missing
25. What percentage of the pharmacy's scripts have the 'substitution not permitted' box ticked or crossed? **_____**	Missing=999; Not applicable=888; Don't know=777. If "<20" or similar written, enter "20" and write exact details in **Comments4** field e.g. Q25 <20. Treat ranges as described in Q16 & records details in **Comments4**
26. Where is your pharmacy in the QCPP process? **1** Accredited **2** Completed but not yet accredited **3** Partially completed (please estimate % ____) **4** Not yet registered ***(Please go to Question 29)***	Enter 7="don't know"; 8="Not applicable"; 9=missing If "Partially completed" ticked but % completed not given, enter "999" for missing otherwise enter "888" as not applicable

27. Please tick ONE box to indicate your agreement with these statements about QCPP and its materials as it relates to this pharmacy.

SD=Strongly disagree, D=Disagree, N=neutral, A=Agree, SA=Strongly agree, DK=Don't know

	SD	D	N	A	SA	DK
The QCPP is a viable model for improving pharmacy practices.	1	2	3	4	5	6
It was easy to understand what we had to do from the QCPP material.	1	2	3	4	5	6
Without the reference materials, implementing QCPP would be very difficult.	1	2	3	4	5	6
QCPP has helped improve this pharmacy's patient contact/ counselling content.	1	2	3	4	5	6
Assessors provide a realistic accreditation evaluation.	1	2	3	4	5	6
Overall, QCPP has had a positive effect on how this pharmacy operates.	1	2	3	4	5	6

Enter number corresponding to agreement level ticked. Note that "DK"=6. 8=not applicable; 9=missing

Use 8=not applicable if "Not yet registered" is ticked in Q26.

If respondent puts a mark on a line between 2 categories, enter the number for the category closest to the middle of the scale e.g. If ticked between SD and D then enter 2.

28. How has QCPP helped the pharmacy to date for the following practice areas?

Please rate each area from **1** to **7**

(1= not at all helpful & 7= extremely helpful)

___Professional services ___Retail skills

___Business management ___Loss prevention

Enter number corresponding to agreement level ticked. Note that Don't know=0 not 7. 8=not applicable; 9=missing

Use 8=not applicable if "Not yet registered" is ticked in Q26.

29. What questions does the pharmacist usually ask the customer when dispensing Mersyndol (not DayStrength) over-the-counter?

_____

Enter text—If missing or illegible, enter "missing" or "illegible"

30. To what extent does this pharmacy provide any of the following professional services?

(Tick ONE box for each question)

(a) Forward pharmacy **1** Always **2** Mostly **3** Never **4** Only when not busy

(b) Internet dispensing **1** Nil **2** Some **3** Often

(c) Hospital in the home **1** Nil**2** Some **3** Often

(d) Nursing home service **1** Not done **2** ≤60 beds **3** 61-150 beds **4** >150 beds

(e) Private hospital service **1** Not done **2** ≤60 beds **3** 61-150 beds **4** >150 beds

(f) Dose Administration Aids—Usual No. packs/week?

1 None **2** ≤50 **3** 51-150 **4** >150

(g) Medication management by accredited pharmacist

1 No **2** Yes, by staff **3** Yes, by contractor

4 Not accredited but do reviews (in

For (a) to (g) Enter 7= "don't know"; 8="Not applicable"; 9=missing.

Enter any other annotated details into an extra **Comments5** field—enter all additional comments or data entry notes for Q30 into this field.

home/institution)
 	
(h) Monitoring and other clinical services
(Please tick all that apply)
NOTE: Numbers in bold here are code numbers for (i) data entry
1 Blood pressure **2** Diabetes **3** Nutrition
4 Asthma **5** Wound care **6** Methadone
7 Community Education **8** Complementary medicines
9 Written patient medication profiles
10 Other, *please specify* _____
(i) Which ONE of the activities ticked in (h) is the MAIN activity? _____
	For (h), where any boxes are ticked, enter "1" for all those ticked and "0" for those not ticked. If no boxes are ticked, treat as missing and enter "9" for every field.
	If "other" is ticked by nothing is specified, enter "missing"
	For (i), enter corresponding code number from (h) above.
	Missing=99 Not applicable=88 Don't know=77

31. **Which of the following resources or programs do you <u>actively</u> use or participate in?** *Please tick all that apply.* ☐ Quality Care Pharmacy Program ☐ Pharmacy Self Care ☐ Australian Medicines Handbook ☐ Training by pharmacy organizations ☐ Australian Pharmaceutical Formulary ☐ Professional journals ☐ Other web-based drug information ☐ Martindale ☐ CD ROM-based drug information e.g. MIMS, PP Guide ☐ Other (specify): _____	Where any boxes are ticked, enter "1" for all those ticked and "0" for those not ticked. If no boxes are ticked, treat as missing and enter "9" for every field. If "other" is ticked by nothing is specified, enter "missing"
Consent Form Name…… Pharmacy Name:……..…….. Signature……...Date……....	Enter first name (or first initial) and the surname. Please separate into 2 fields. If names are missing, enter "missing". Enter pharmacy name. Indicate whether or not a signature has been provided—enter 0=No or 1=Yes. Enter date signed as dd/mm/yyyy. Please annotate final comments field if names illegible
Participation in the next phase **1** Yes **2** No	Enter 9=missing 8=not applicable 7=don't know 6="maybe" or similar that indicates conditional participation or that future participation is possible
	Make a **Comments 6** field (150 characters) for any additional annotations or data entry comments

Appendix 6: 4CPA QCPP consumer survey

Pharmacy Patient Questionnaire

0 5 1 0 A

0 0 0 0 0 0 – 0 0 0 0 0 0

Example Pharmacy Name

0 5 1 0 B

Other Issues (continued)		Poor	Fair	Good	Very Good	Excellent	Don't know
Q19	The information provided by this pharmacy about how to prevent illness and stay healthy (e.g. skin care, health risks of smoking, diet habits, etc) was...	☐	☐	☐	☐	☐	☐
Q20	The opportunity for making compliments or complaints to this pharmacy about its service and quality of care	☐	☐	☐	☐	☐	☐

Finally		Poor	Fair	Good	Very Good	Excellent	Don't know
Q21	My overall satisfaction with this pharmacy	☐	☐	☐	☐	☐	☐

The pharmacy staff would appreciate any suggestions as to how they could improve the quality of their interaction with you?

How can the pharmacy in general improve its service?

The following questions provide us only with general information about the range of people who have responded to this survey. This information will not be used to identify you and will remain confidential.

How old are you in years?	Are you:	Is this your regular pharmacy?	How many times have you been to this pharmacy?	Do you have any chronic illness or disability that is likely to affect you over a long period of time?
☐ Under 25	☐ Female	☐ Yes	☐ Less than 5 times	☐ Yes
☐ 25 – 59	☐ Male	☐ No	☐ 5 -10 times	☐ No
☐ 60+			☐ More than 10 times	

Your background - please answer each of the four questions below:			Is your accommodation:	
Do you primarily speak English at home?	☐ Yes	☐ No	Owner-occupied/mortgaged?	☐
Do you speak another language apart from English?	☐ Yes	☐ No	Rented from a private landlord?	☐
Were you born in Australia?	☐ Yes	☐ No	Rented from department of housing?	☐
Are you of Aboriginal or Torres Strait Islander descent?	☐ Yes	☐ No	Other arrangements?	☐

What is the highest level of education you have completed?			
Never attended school	☐	TAFE or Trade Certificate or Diploma	☐
Primary school	☐	University or some other Tertiary Institute degree	☐
High school	☐	Other	☐

Thank you for your time and assistance in completing this questionnaire

Rev 2.2

cfep Surveys

Appendix 7: Pharmacy Cardiovascular Health Care Model consumer telephone script

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PCHCM Script for Phone Surveys.

Project: PHARMACY MAIN—LIVE INTERVIEWING Job:50658M

Good evening, my name is _____ from I-view, the social and market research company.

Today we are conducting important research on a range of health issues on behalf of the University of Tasmania and Curtin University in Western Australia. We would like your help.

The interview will take approximately 15 mins. Please be assured that your answers are completely confidential. [IF INCONVENIENT—ARRANGE CALLBACK]

Location:

Sydney	01
Melbourne	02
ACT	03
Hobart	04
Perth	05
Adelaide	06
NT	07
Brisbane	08
Rest of Vic	09
Rest of NSW	10
Rest of Tas	11
Rest of WA	12
Rest of SA	13
Rest of QLD	14

We may at any time during this interview be listened to by my supervisor for quality control procedures.

Continue	1
Refused to continue	2—Terminate.

Q1 What is your year of birth? [ENTER 9999 FOR REFUSED]

___Age, ___Year.

Could I please speak to a permanent resident of the household who is over 30 years of age?

Yes, transferred	1
No, not available [ARRANGE CALLBACK]	2

No, refused/unavailable for duration or no one over 30 3

Do you or anyone in your household work as Pharmacist, Doctor or Nurse?

Yes 1
No 2

Phone Number Called:_____

Edit phone number if necessary:_____

Thank you for your help but need to speak to people that do not work in that industry.

Q2 How often do you visit a pharmacy?

Weekly 1
Fortnightly 2
Monthly 3
About once every 3 months 4
Less than once every 3 months 5

Is there someone else in your family/household over 30 years old who visits a pharmacy regularly?

Yes, transferred 1
No, not available [ARRANGE CALLBACK] 2
No, refused/no one visits pharmacy 3

INTRO [WHEN SPEAKING TO NEW RESPONDENT]

Good evening, my name is _____ from I-view, the social and market research company.

Today we are conducting important research on a range of health issues on behalf of the University of Tasmania and Curtin University in Western Australia. We would like your help. The interview will take approximately 15 mins. Please be assured that your answers are completely confidential. [IF INCONVENIENT - ARRANGE CALLBACK]

Q46 [AUTOMATICALLY RECORD GENDER]

Male 1
Female 2

Q3 How would you describe your general satisfaction with the quality of the service provided by the pharmacies you have visited in the last 6 months? [READ OUT]

Very dissatisfied 1
Dissatisfied 2
Neither satisfied nor dissatisfied 3
Satisfied 4
Very satisfied 5

Q4 Do you have any ongoing conditions/illnesses that require you to take regular medications?

Yes 1
No 2

Q5 Does your illness(es) include any of the following? [READ OUT] [MULTIPLE RESPONSE]

High blood pressure known as hypertension	01
Chest pain known as angina	02
Previous heart attack known as myocardial infarction	03
Heart not pumping adequately known as heart failure (common symptoms swelling of ankles, shortness of breath)	04
Abnormal heart rhythm known as cardiac arrhythmia	05
Raised blood cholesterol or triglycerides known as dislipidaemia	06
Poor blood supply to the brain known as transient ischaemic attacks	07
A stroke known as cerebrovascular accident	08
Raised blood sugar known as diabetes	09
Kidney damage known as renal failure	10
None of the above	99

Q6 Do you have a regular (preferred) pharmacy?

Yes 1
No 2

Q7 What are the features of that pharmacy, which attract you to it? [DO NOT READ] [MULTIPLE RESPONSE]

Convenient location	1
Friendly staff	2
Professional advice	3
Professional services provided	4
Quality of the service	5
Product prices	6
Other (Specify)	7
Knowledge of the pharmacy staff	8

I would like to reassure you that the following questions are not a test of your knowledge of Australia's health system but rather your answers should be based on your perceptions and experience.

The first set of questions is about the management of cardiovascular disease (i.e. raised blood pressure, angina and heart attacks, heart failure, and abnormal heart rhythm).

Now I am going to ask you a series of questions and I apologise that they may be repetitive but I want to know how well do you agree with each of these statements?

Q8-18

How well do you agree with this statement?

Pharmacists are capable of providing a service for:

1 Strongly disagree

2 Disagree
3 Neither agree or disagree
4 Agree
5 Strongly agree

Q8 Providing screening or testing for raised blood pressure?

Q9 Testing or screening for diabetes?

Q10 Testing for raised cholesterol?

Q11 Diagnosing cardiovascular diseases?

Q12 Providing advice on lifestyle changes (weight loss, smoking, alcohol intake etc.)?

Q13 Prescribing drug treatment for cardiovascular diseases?

Q14 Supplying medicines for cardiovascular diseases?

Q15 Providing advice on over-the-counter and herbal medicines to be avoided by patients with a cardiovascular disease?

Q16 Providing information about cardiovascular diseases and their management?

Q17 Providing advice on how to take medicines properly?

Q18 Checking or monitoring the outcomes of drug treatment?

The next set of questions is about how likely you would be to use certain professions for health related services and again I apologise if it seems repetitive.

Q19-29 How well do you agree with this statement?

How likely is it that you would use the service if provided by (named individually) a pharmacist, doctor, nurse, dietitian, naturopath?

1 Strongly disagree
2 Disagree
3 Neither agree or disagree
4 Agree
5 Strongly agree

Service offered:

Q19 Providing raised blood pressure screening or testing service?

Q20 Testing or screening for diabetes, raised sugar levels?

Q21 Testing or screening service for raised cholesterol?

Q22 Diagnosing cardiovascular diseases (raised blood pressure etc.)?

Q23 Providing education on lifestyle changes (diet, exercise, alcohol intake, smoking, alcohol intake, weight loss etc.)?

Q24 Prescribing drug treatment for cardiovascular diseases?

Q25 Supplying medicines for cardiovascular diseases?

Q26 Providing advice on over–the–counter and herbal medicines to be avoided by patients with a cardiovascular disease?

Q27 Providing information about cardiovascular diseases and their management?
Q28 Providing advice on how to take medicines properly?
Q29 Checking or monitoring the outcomes of drug treatment?

If all of the following statements are true, how concerning is each to you using a rating out of 10, where 0 = unconcerned and 10 = very concerned)?

Q30 Raised blood pressure (hypertension) affects about 1 in 4 Australian adults.
Q31 Approximately 1 in 5 deaths in Australia is caused by a heart attack.
Q32 More than 10% of Australians over the age of 60 years have heart failure, causing reduced life expectancy.
Q33 The commonest form of abnormal heart rhythm, atrial fibrillation, affects over 2% of Australians over 45 years, putting them at increased risk of stroke.
Q34 Around 50% of adult Australians have raised cholesterol, putting them at increased risk of heart attack and stroke.

Q35 Does any pharmacy that you visit offer any of the following services?

1 Yes
2 No
3 Don't know
Blood pressure monitoring
Blood sugar testing
Cholesterol monitoring

I would now like to ask some specific questions about you.

Q36 How tall are you?

ENTER HEIGHT IN CM's OR FT/INCHES; ENTER ZERO (0) IN UNUSED CELLS]

IF REFUSED, ENTER 1 IN "DECLINED TO ANSWER" AND "0" IN CM. FEET AND INCHES

How much do you weigh?

ENTER WEIGHT IN KG's OR ST/LBS OR POUNDS ONLY; ENTER ZERO ("0") IN UNUSED CELLS]. ENTER 1 FOR DECLINED IF REFUSED TO ANSWER OTHERWISE "0"

Q37 Have your every sought help on weight control?

Yes 1
No 2

Q38 From who? [DO NOT READ] [MULTIPLE RESPONSE]

Doctor 1
Pharmacist 2

Nurse	3
Dietician	4
Friend/relative	5
Other[SPECIFY]	6
Weight watchers or similar	7

Q39 How often would you do 20 or more minutes of exercise in one session?

More than once a day	1
Daily	2
4 to 6 times a week	3
2 to 3 times a week	4
Weekly	5
Fortnightly	6
Monthly	7
Occasionally	8
Never	9

Q40 Have you ever sought help on exercise?

Yes	1
No	2

Q41 From whom? [MULTIPLE RESPONSE] [DO NOT READ]

Doctor	1
Pharmacist	2
Nurse	3
Dietician	4
Physiotherapist	5
Gym/sports instructor	6
Friend/relative	7
Other[SPECIFY]	8

Q42 Have you ever smoked tobacco products? PROMPT FOR CURRENT SMOKER IF NECESSARY

Never	1 Skip Q43, Q44
Past smoker	2 Skip Q43, Q44
Current smoker	3

Q43 How many cigarettes do you normally smoke per day?

< 1	01
1-10	02
11-20	03
21-30	04
31-40	05
> 40	06
REFUSED	99

Q44 Have you ever sought assistance to stop smoking?

Yes 1
No 2

Q45 From whom?

Doctor 1
Pharmacist 2
Nurse 3
QUIT line 4
Friend/relative 5
Other[SPECIFY] 6

Q47 What is your current work status? [READ OUT]

Unskilled blue collar (labourer, cleaner, packer) 01
Semi-skilled blue collar (driver, storeman) 02
Skilled blue collar (carpenter, plumber, hairdresser) 03
Lower white (clerk, secretary, shop assistant) 04
Upper white (teacher, nurse, architect) 05
Senior upper white (director) 06
Unemployed 07
Pensioner 08
Retired 09
Student 10
Home duties 11
Part time 12
Full time 13
Other[SPECIFY] 97
DO NOT READ REFUSED 99

Q48 How many adults aged 25 years or older are there living in your place of residence including yourself?

USE "99" FOR REFUSED, ___ adults aged 25 years or older

Q49 What is your postcode?

_____[CHANGE IF NECESSARY]

Thank you very much for your co-operation with our survey

In case my supervisor needs to contact you to check the validity of this interview, could I please ask for your name? [DO NOT ENTER ON THE NAME TILL YOU HANG UP]

_____

Can I just check the phone number I called?

_____

As a Market Research company, we comply with the requirements of the Privacy Act. Would you like me to read you our full Privacy Statement?

Yes 1
No 2

In accordance with the Privacy Act, once information processing has been completed, please be assured that your name and contact details will be removed from your responses to this survey. After that time we will no longer be able to identify the responses provided by you. However, for the period that your name and contact details remain with your survey responses, which will be approximately 2 to 4 weeks, you will be able to contact us to request that some or all of your information be deleted.

In case you missed it earlier, my name is _____ from I-view. If you would like to contact my supervisor to check the validity of this study you can call I-view on:

Melbourne: 1300 557 781.

Thank you for your time.

Appendix 8: Current and future pharmacy practice pharmacist survey

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Your current and future pharmacy practice

Recent reports have suggested pharmacists could fill additional roles to assist in the GP shortage in regional Australia. These roles include immunisation/ vaccination services, as well as roles in disease state management and continued prescribing in chronic care.

Community pharmacy in Australia is reimbursed for most of its services under the Community Pharmacy Agreement (CPA). The current agreement, the 5th Agreement (5CPA), concludes on 30 June 2015. The next agreement, the 6th Agreement (6CPA), will then allocate funds for services for 5 years until 30 June 2020.

This survey is part of a PhD study looking at the knowledge and skills required for rural pharmacy practice. The Tasmanian Social Science Human Minimal Risk Ethics Committee of the University of Tasmania has approved this survey (H0014020).

References:

1. Duckett, S and Breadon, P. Grattan report: Access All Areas New Solutions for GP Shortages in Rural Australia 2013 available at: http://grattan.edu.au/static/files/assets/31e5ace5/196-Access-All-Areas.pdf Accessed 26 July 2014
2. Fifth Community Pharmacy Agreement available at: http://5cpa.com.au/about-5cpa/ Accessed 26 July 2014

Please give us your opinion of alternate practice options and suggest what you would like to see in the next Agreement.

Please assist in this research to enable to capture a snapshot of current thinking from members of the pharmacy profession.

At the end of the survey you can enter for the prize of an iPad mini 16G, white with WiFi.

If you would like to read more before proceeding, here is an information sheet.

There are 28 questions in this survey.

Demographics

1. Are you male or female?

Please choose **only one** of the following:

- Female
- Male

2. How old are you?

Only numbers may be entered in this field.

Please write your answer here:

Enter your age in years:

3. How many years have you practiced pharmacy?

Only numbers may be entered in this field.

Please write your answer here:

4. How many paid hours per week do you work in your main job in pharmacy?

Only numbers may be entered in this field.

Please write your answer here:

5. What is your current work town/suburb for your main pharmacy role?

Please write your answer here:

6. What is your work postcode?

Only numbers may be entered in this field.

Please write your answer here:

7. What is your main work PhARIA (if known)?

PhARIA is a ranking of rurality in Australia, PhARIA 1 is metropolitan and larger towns, and PhARIA 6 is remote Australia.

Please choose **only one** of the following:

- PhARIA 1
- PhARIA 2
- PhARIA 3
- PhARIA 4
- PhARIA 5
- PhARIA 6

8. What is your current home suburb/town?

Please write your answer here:

9. What is your home postcode?

Only numbers may be entered in this field.

Please write your answer here:

10. What is your home PhARIA (if known)?

PhARIA is a ranking of rurality in Australia, PhARIA 1 is metropolitan and larger towns, and PhARIA 6 is remote Australia.

Please choose **only one** of the following:

- PhARIA 1
- PhARIA 2
- PhARIA 3
- PhARIA 4
- PhARIA 5
- PhARIA 6

11. What is your primary pharmacy role?

Please choose **only one** of the following:

- Community pharmacy owner
- Pharmacist manager/employee
- Pharmacist locum
- Medication review pharmacist
- Pharmacist intern
- Other

Make a comment on your choice here:

Pharmacy practice

12. What is your view on immunisation in the community pharmacy setting? It is almost certain that vaccination (or immunisation) will take place in community pharmacy in an appropriate area with a trained pharmacist vaccinator in the near future.

List your preference order where 1 is most preferred and 4 is least preferred.

Please write your answer(s) here:

- I would be happy as a Pharmacist Vaccinator to personally administer immunisations in a pharmacy setting
- I would only provide this service if I employed a trained Pharmacist Vaccinator
- I would only provide immunisations in a pharmacy with an authorised Registered Nurse or Nurse Practitioner
- I would not provide this service in my pharmacy

13. If this service was provided I would:

Please choose the appropriate response for each item:

	Yes	Uncertain	No
Only provide this service if I was remunerated by the Government			
Be happy for the patient to pay the full price of the services			
Accept a rate of $12.10 plus the wholesale cost of the vaccine (administration rate suggested by the Grattan Report)			
Accept a rate of $12.10 plus wholesale and dispensed cost ($6.76) of the vaccine (administration rate suggested by the Grattan Report)			

14. If you would NOT provide an immunisation service or would provide this service at a different rate than that suggested ($12.10), can you please say why?

Please write your answer here:

15. Disease state management in chronic care consists of many aspects. In pharmacy, pharmacists can monitor for adverse reactions and optimal medication management but there can be additional aspects to disease state management provided.

Please give your opinion of the following statements.

In the future, I would expect to:

Please choose the appropriate response for each item:

	Yes	Uncertain	No
Adjust doses e.g. for hypertension medication			
Discontinue or alter medication to another for the same condition e.g. for hypertension			
Notify GPs and other health practitioners of any relevant information to add to the patient's health plan			
Continue dispensing prescriptions for up to 18 months instead of 12 months			

16. If this service was provided I would:

Please choose the appropriate response for each item:

	Yes	Uncertain	No
Only provide this service if I was remunerated by the Government			
Provide a medication management service for $18.15 per 15-minute consultation (as suggested by the Grattan Report)			
Provide a medication management service for $18.15 per 30-minute consultation (as suggested by the Grattan Report)			
Continue dispensing repeat prescriptions at a rate of $12.10 per 15-minute consultation (as suggested by the Grattan Report)			
Continue dispensing repeat prescriptions at a rate of $12.10 per 30-minute consultation (as suggested by the Grattan Report)			

17. If you would NOT provide a disease state management service or disagree with the suggested rates, can you say why?

Please write your answer here:

18. If the profession does take up the following services, should they only be provided by pharmacists in rural and remote areas?

Please choose the appropriate response for each item:

	Yes, rural pharmacies only	No, all pharmacies
Vaccination/Immunisation service		
Chronic disease state management including continued dispensing of repeats and adjusting doses		

19. If you think these new services should only be supplied in rural and remote areas, please say why.

Please write your answer here:

20. Your relationship with local GPs is crucial to these additional roles of vaccination and chronic disease management.

Please choose the appropriate response for each item:

	Yes	Uncertain	No
Is your current level of relationship with local GPs good?			
Would provision of these services improve your relationship with GPs?			
Would it impact adversely on your relationship with GPs?			

21. If you think these services would improve or impact adversely your relationship with GPs, please say why.

Please write your answer here:

Future pharmacy practice

22. We would like a snapshot of your **current** practice, what you would **like to be doing in 5 years' time** and what you think you will be **actually doing in 5 years' time**.

Please write the proportion of your time taken up with the following activities.

You can select as many boxes as you would like.

	What I am doing NOW (percentage)	What I would LIKE to do in 5 years (percentage)	What I think I WILL be doing in 5 years (percentage)
Dispensing and patient counselling for prescriptions			
OTC S2/S3 sales and advice			
Administration/Management/Stock Control			
Pharmacy Medication Review Programs (MedsCheck, Diabetes MedsCheck)			
Other Medication Review Programs (HMR,RMMR)			
Pharmacy Practice Improvement Programs (Clinical Interventions, Dose Administration Aids, Screening and Risk Assessment/ Disease State Management, Health Promotion Activities)			
Training of interns/students within a pharmacy setting			
Educator or Academic Activities			
Research			
Ward Based Clinical Services			
Continuing Professional Development			
Other			

23. Please give examples of other current activities not listed.

Please write your answer here:

24. In the table below are some of the major expenditure items of the 5CPA. What changes would you like to see in expenditure in the 6CPA?

Please choose the appropriate response for each item:

	Increase	Same	Decrease
Dispensing			
Pharmacy Medication Review Programs (MedsCheck, Diabetes MedsCheck)			
Other Medication Review Programs (HMR, RMMR)			
Clinical Interventions			
Dose Administration Aids (DAAs)			
Staged Supply			
Rural Programs (Workforce and Maintenance Allowance)			

25. What new initiatives would you like to see in the 6th Community Pharmacy Agreement (6CPA)?

Please write your answer here:

26. How do you see the pharmacy profession positioned in 5 years' time compared to now?

Please choose **all** that apply:

- Much worse
- Worse
- Neither worse not better
- Better
- Much better

27. Pharmacy as a profession has the following professional qualities.

How do you think these professional qualities will change in the next five years?

Please choose the appropriate response for each item:

	Increase	Same	Decrease
Altruism: Serving the interest of the patients			
Accountability: Accountable for your actions			
Excellence: Committed to lifelong learning			
Duty: Committed even when inconvenient			
Honour and Integrity: Fair, truthful			
Respect for Others: Respect other pharmacists, health professionals, patients and families			

28. If you have any other comments please add them here.

Please write your answer here:

Thank you very much for taking the time to complete this survey.

Please continue for a chance to win an iPad mini 16G, white with WiFi.

Submit your survey.

Thank you for completing this survey.

Appendix 9: Ethics applications, copies of initial project approval letters and final report project approval letters

Formatted HH.

Social Science HREC Ethics Ref: H0010055 (University of Tasmania): What makes rural pharmacy practice different?

Copy of original ethics project approval of project H0010055

From: Frances Martin [F.Martin@utas.edu.au]

Sent: Sunday, 18 May 2008 1:53 PM

To: G.Peterson@utas.edu.au; Shane_lj@utas.edu.au; Helen.Howarth@utas.edu.au

Cc: Marilyn Knott

Subject: Re: New Minimal Risk - H10055 - Pharmacy

Attachments: Letter of Introduction.SSHREC Howarth May 2008.finalfm.doc; Information

sheet for SSHREC Howarth May 2008.finalfm.doc

Dear Gregory, Shane, and Helen,

I have reviewed your minimal risk application for ethics approval for this preliminary study. I am happy to grant ethics approval and to advise that you may now commence data collection using the attached information sheet and introductory letter with the name of the ethics committee that has given this approval changed to the correct one.

I wish you well with the research,

Frances Martin

Chair

SS HREC

From: Lauren.Townsend@utas.edu.au Lauren.Townsend@utas.edu.au

Sent: Monday, 23 July 2012 12:18 PM

To: Gregory Peterson G.Peterson@utas.edu.au

Cc: Shane Jackson <Shane.Jackson@utas.edu.au>; Helen Howarth Helen.Howarth@utas.edu.au

Subject: Ethics Request for Extension of Project Approved: H0010055 What makes rural pharmacy practice different

Dear Professor Peterson

Ethics Ref No: H0010055

Project title: What makes rural pharmacy practice different? Defining the key knowledge and skills needed for rural practice.

I wish to confirm that your request for an extension of ethics cover on this project was approved by the Chair of the Tasmania Social Sciences Human Research Ethics Committee on 16/7/2012.

It is not standard policy to send a letter of confirmation for an extension approval but if necessary, this can be arranged. Your next Progress Report for this project is due on the anniversary date of your original ethics approval. You will receive an automatically generated email prior to this date to remind you of this responsibility.

Should you have any queries please do not hesitate to contact me.

Kind regards

Lauren Townsend

Lauren Townsend
Ethics Officer
Office of Research Services
University of Tasmania
Private Bag 01
Hobart TAS 7001
Phone: (03) 6226 7148
Fax: (03) 6226 2765
Email: Lauren.Townsend@utas.edu.au
Web: http://www.research.utas.edu.au/

Copy of final ethics project report approval H0010055

Final Approval Replacement Email

6 August 2018

Dear Professor Peterson

Ethics Ref No: H0010055

Project title: What makes rural pharmacy practice different? Defining the key knowledge and skills needed for rural practice.

This email is to confirm that your Ethics Final Report was approved by the Tasmania Social Sciences Human Research Ethics Committee on 20/5/2013.

Should you have any queries please do not hesitate to contact me.

Kind regards

Katherine

Katherine Shaw

Executive Officer, Social Sciences HREC

Office of Research Services | Research Division

University of Tasmania

Private Bag 1

Hobart TAS 7001

T +61 3 6226 2763

www.utas.edu.au/research

UNIVERSITY of TASMANIA

CRICOS 00586B

Social Science HREC Ref No: H0015844: Project title: What makes rural pharmacy practice different? Defining the key knowledge and skills needed for rural practice.

Copy of original ethics project approval of project H0015844

From: Katherine Shaw

Sent: Wednesday, 29 June 2016 2:04 PM

To: Gregory Peterson

Cc: Helen Howarth; Shane Jackson; Tabish Razi Zaidi

Subject: Ethics Application Approved: H0015844 What makes rural pharmacy practice different? Defining the key knowledge and skills needed for rural practice

Dear Professor Peterson

Ethics Ref No: H0015844

Project title: What makes rural pharmacy practice different? Defining the key knowledge and skills needed for rural practice

The above Minimal Risk application has been approved by the Chair of the Tasmania Social Sciences Human Research Ethics Committee, on behalf of the full committee. Approval is for four years and conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

A copy of the approval letter is attached for your records. Because evidence of ethics approval will be necessary for thesis submission, all researchers have been copied on this email.

The Ethics Committee wishes you all the best with the project.

Kind regards

Katherine

Katherine Shaw
Executive Officer, Social Sciences HREC
Office of Research Services | Research Division
University of Tasmania
Private Bag 1
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T +61 3 6226 2763
www.utas.edu.au/research

Paula Swatman <paula.swatman@utas.edu.au

28/06/2016 12:42 PM

To: Gregory Peterson; Shane Jackson; Tabish Razi Zaidi; Helen Howarth

Cc: Katherine Shaw

Dear Helen, Greg, Shane and Tabish,

Thank you for submitting this minimal risk application – and for making the changes already recommended by Katherine Shaw!

I have now reviewed your application and its associated documents and am satisfied you have put in place effective management strategies for the potential ethical risks associated with this project. I can therefore approve this application with immediate effect.

Katherine will contact you separately to finalise the formal aspects of this approval, but you are welcome to commence your data gathering immediately if you wish.

Good luck with the follow-up interviews!

All the best,

Paula

Prof. Paula Swatman
Chair
Social Science Human Research Ethics Committee
Research Integrity and Ethics Unit
Office of Research Services
University of Tasmania
Private Bag 01, Hobart TAS 7001
Tel: +61 (0)3 6226 2763

Copy of final ethics project report approval H0015844

Mon 25/06/2018 10:10 AM

Gregory Peterson, Shane Jackson, Tabish Razi Zaidi Helen Howarth

Dear Professor Peterson

Ethics Ref No: H0015844

Project title: What makes rural pharmacy practice different? Defining the key knowledge and skills needed for rural practice

This email is to confirm that your Ethics Final Report was approved by the Tasmania Social Sciences Human Research Ethics Committee on 18/6/2018.

Should you have any queries please do not hesitate to contact me.

Kind regards

Emma Field

Emma Field
Administration Officer
Office of Research Services
University of Tasmania
Private Bag 01
Hobart TAS 7001
Phone: (03) 6226 2608
Fax: (03) 6226 2765
Email: Human.Ethics@utas.edu.au
Web: http://www.utas.edu.au/research-admin

Social Science HREC Ethics Ref No: CF08/0305–200800110 Healthy Hearts in pharmacy (Monash University) and H0009995 (University of Tasmania)

Copy of original ethics project approval Monash University CF08/0305–200800110

MONASH University

Standing Committee on Ethics in Research Involving Humans (SCERH)
Research Office

Human Ethics Certificate of Approval

Date:	**10 April 2008**
Project Number:	**CF08/0305 - 2008000110**
Project Title:	**Healthy hearts in Pharmacy**
Chief Investigator:	**Mr Kevin McNamara**
Approved:	**From: 10 April 2008 to 10 April 2013**

Terms of approval

1. The Chief investigator is responsible for ensuring that permission letters are obtained and a copy forwarded to SCERH before any data collection can occur at the specified organisation. **Failure to provide permission letters to SCERH before data collection commences is in breach of the National Statement on Ethical Conduct in Human Research and the Australian Code for the Responsible Conduct of Research**.
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by SCERH.
4. You should notify SCERH immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash University letterhead and the Monash University complaints clause must contain your project number.
6. **Amendments to the approved project:** Requires the submission of a Request for Amendment form to SCERH and must not begin without written approval from SCERH. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. SCERH should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by SCERH at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

Professor Ben Canny
Chair, SCERH

Cc: Dr Johnson George; Mr Gregory John Duncan; Gregory M Peterson; Dr Helen Howarth; James Dunbar; Dr Shane Jackson; Prof Edward Janus; Dr Sharleen O'Reilly; Prof Brian Oldenburg; Dr Stephen Bunker; Prof Jon Emery;

Postal – Monash University, Vic 3800, Australia
Building 3E, Room 111, Clayton Campus, Wellington Road, Clayton
Telephone +61 3 9905 5490 Facsimile +61 3 9905 1420
Email scerh@adm.monash.edu.au www.monash.edu/research/ethics/human/index/html
ABN 12 377 614 012 CRICOS Provider #00008C

Copy of original ethics project approval H0009995 (University of Tasmania)

-----Original Message-----

From: Katherine Shaw [mailto:Katherine.Shaw@utas.edu.au]

Sent: Monday, 21 July 2008 10:54 AM
To: Gregory Peterson
Cc: Helen Howarth; Shane Jackson; Kimbra Fitzmaurice
Subject: Notification of Medical Ethics Approval: H0009995 Healthy Hearts in Pharmacy

Dear Professor Peterson,

Reference number: H0009995
Title: Healthy Hearts in Pharmacy

We are pleased to advise that this study has been approved by the Tasmanian Human Research Ethics Committee and a signed copy of the approval letter will be forwarded to you in the next few days. This will be sent to the first named investigator, except in the case of clinical trials where correspondence will be sent to the named data manager, where applicable.

Please contact us if you require further information.

Kind regards,
Katherine

Katherine Shaw
Ethics Officer, Health and Medical
Office of Research Services
University of Tasmania
Private Bag 01
HOBART TAS 7001

Email: Katherine.Shaw@utas.edu.au
Telephone: (03) 6226 2763
Fax: (03) 6226 2765

Copy of final ethics project report approval H0009995 (University of Tasmania)

Dear Professor Peterson

Ethics Ref No: H0009995
Title: Healthy Hearts in Pharmacy

I wish to inform you that the Human Research Ethics Committee (Tasmania) Network has approved your Final Report for the above named study. Our file will now be closed and archived.

It is not standard to send a hardcopy version of this approval. Should you require one please contact me.

Should you have any queries please do not hesitate to contact us.

Kind regards

Adele Kay

Adele Kay
Ethics Officer
Office of Research Services
University of Tasmania
Private Bag 01
Hobart TAS 7001
Phone: (03) 6226 1956
Fax: (03) 6226 2765
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Web: http://www.research.utas.edu.au/

Social Science HREC Ethics Ref No: H0014020: Your current and future pharmacy practice

Copy of original ethics project approval H0014020

On 18 Jul 2014, at 3:58 pm, Katherine Shaw <Katherine.Shaw@utas.edu.au> wrote:

Dear Professor Peterson

Ethics Ref No: H0014020

Project title: Your Current and Future Pharmacy Practice

The above Minimal Risk application has been approved by the Chair of the Tasmania Social Sciences Human Research Ethics Committee, on behalf of the full committee. Approval is for four years and conditional upon receipt of an annual Progress Report. Ethics approval for this project will lapse if a Progress Report is not submitted.

A copy of the approval letter is attached for your records. Because evidence of ethics approval will be necessary for thesis submission, all researchers have been copied on this email.

The Ethics Committee wishes you all the best with the project.

Kind regards

Katherine

Katherine Shaw
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Office of Research Services
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T +61 3 6226 2763
CRICOS 00586B

Copy of final ethics project report approval H0014020

From: Human.Ethics@utas.edu.au Human.Ethics@utas.edu.au

Sent: Monday, 28 May 2018 11:08 AM

To: Gregory Peterson g.peterson@utas.edu.au

Cc: Shane Jackson <shane.jackson@utas.edu.au>; Helen Howarth helen.howarth@utas.edu.au

Subject: Ethics Final Report Approved: H0014020 Your Current and Future Pharmacy Practice

Dear Professor Peterson

Ethics Ref No: H0014020

Project title: Your Current and Future Pharmacy Practice

This email is to confirm that your Ethics Final Report was approved by the Tasmania Social Sciences Human Research Ethics Committee on 21/5/2018.

Should you have any queries please do not hesitate to contact me.

Kind regards

Emma Field

Emma Field
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